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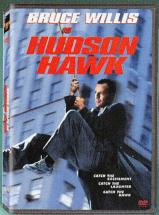
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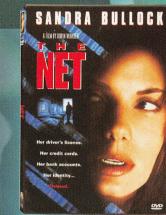
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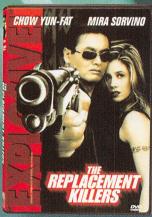
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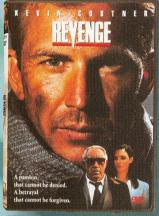




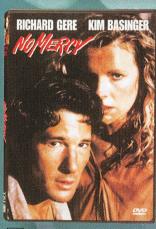




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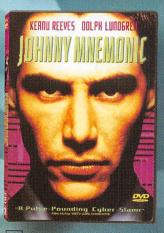








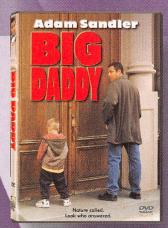
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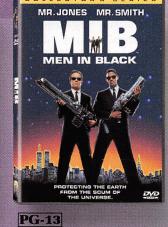


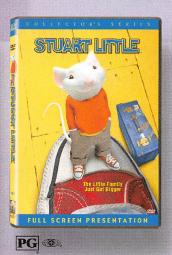
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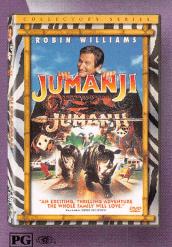


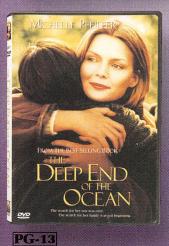


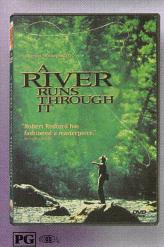


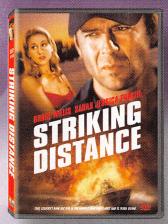




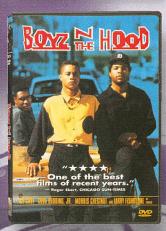




















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Contributing Technical Editors DANIEL KUMIN, IAN G. MASTERS TOM NOUSAINE, KEN C. POHLMANN

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Editorial offices: 1633 Broadway, New York, NY 10019; 212-767-6000;

e-mail, soundandvision@hfmmag.com

Vice President, Group Publisher TONY CATALANO

CONSUMER ELECTRONICS GROUP ADVERTISING

National Advertising Director

Angela Stolfi, 212-767-6032

Regional VP/Ad Director, West Coast

Regional Account Managers

Paul Smith, 212-767-6077 Gabrielle DiFolco, 212-767-6063 Brian Masamoto, 323-954-4857

Director of Marketing

Rob Sabin, 212-767-6027

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Assistant to the Publisher Breana Murphy

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Classified Advertising 800-445-6066

Production Director Michael Esposito Production Manager Lorraine Conaty Production Assistant Mary O'Donnell

VP, Group General Manager Winsford Belle
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Newsstand Sales Director Megan Jenkins Senior Director, Circulation Services Rocco P. Chiappetta

Circulation: Curtis Circulation Co., 730 River Rd., New Milford, NJ 07646 Subscription information 850-682-7654; hachette@neodata.com

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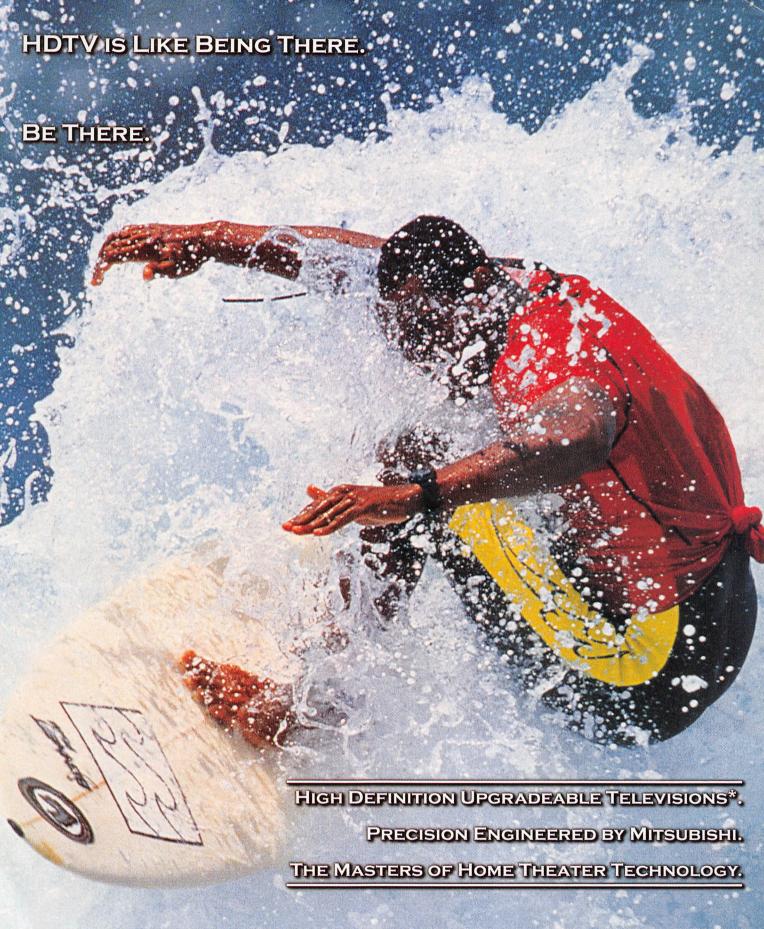


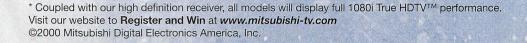
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Chairman: Daniel Filipacchi e President and CEO: Jack Kliger
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Stereo Review, June 1998 Tom Nousaine

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track one

The Eyes Have It

inter 2000-2001 was one of the worst cold seasons in recent memory. As I boarded a plane headed for the Consumer Electronics Show, I was thinking how great it was that I'd somehow managed to escape a prolonged bout of sniffling and sneezing. By the time the plane landed in Las Vegas, whatever luck I had was running out. I could feel a cold coming on — and my left ear was stuffed up. Attributing the ear problem to the changes in altitude, I figured my hearing would be back to normal in a couple of hours at most. Wishful thinking. My ear remained clogged for the whole show!

It's not like I was deaf or anything, but sounds coming from my left side were distinctly muffled. So there I was at CES - renowned for awesome home theater demos featuring state-of-the-art audio and video components — with a bum ear. (For a full report on the show, see "CES Showstoppers," page 82.) There was, however, a silver lining in this dark cloud. Since I was forced to pretty much ignore the audio, I was able to really focus on the video side of the presentation. And given my audio-oriented background — I spent 11 years at Stereo Review before becoming editor of this magazine — it was an enlightening experience.

Although there weren't many HDTV introductions at this CES, there were still a lot of high-definition sets on display. Apart from the natural color and striking clarity of a high-def image, I still marvel that you can stand a couple feet away from the screen and not see any distracting scan lines or pixel structures. You really have to see it to believe it. There's no doubt that the more highdef video I see, the more critical I become of the faithful old analog NTSC system.

One of the most extraordinary HDTV demos was staged by an unexpected host — Yamaha. Known for its audio prowess, the company is expanding into the world of video with a front projector that uses Texas Instruments' amazing Digital Light Processing (DLP) chip (for details on this and other display technologies, see "How to Buy an HDTV," page 91). Yamaha says it spent several years tweaking the design of its compact DPX-1 projector, which is slated to hit stores mid-year

with a steep but competitive \$10,000 price tag (hey, DLP is a relatively new technology).

Watching a clip of the Fabulous Thunderbirds performing live, I was struck by the incredible detail of the DPX-1's panoramic image. When the camera zoomed in on the guitar player, I could see the dirt under his fingernails — and I was sitting in the back of the room! It was easy to imagine being there (if only I could have fully appreciated the 5.1-channel surround sound mix). The concert footage - shot in high-def by AIX Media for use in an upcoming DVD-Audio release — is so spectacular that Yamaha is using it for dealer training.

I witnessed another knockout video performance at a press event hosted by high-end-video king Runco. The company demonstrated several front projectors, a new 42-inch plasma display, and its first DLP-based rearprojection TV, featuring a 72-inch screen. While all of the images were impressive, the picture put up by Runco's flagship VX-3c front projector (a design that uses three DLP chips) was mind-blowing — even though the source was DVD upconverted to near-HD quality.

Of course, at 65 grand, its price was mind-blowing, too. At least the projector comes with Runco's flagship controller (a special \$30,000 anamorphic lens was also used for the demo). The kidnapping scene from the Hitchcock classic North by Northwest was so vivid and lifelike, I wanted to jump in and help Roger Thornhill (Cary Grant) out of his bizarre predicament.

HDTV offers a stunning leap in picture quality beyond ordinary TV. But until high-def programming is more widely available — cable companies, are you listening? — and Hollywood gets over its crippling copy paranoia (see "DTV Update," page 18) many people will remain on the sidelines. And that's a shame, because prices are coming down, with many HDTV-ready sets now available in the \$2,000 to \$3,000 range. Let's hope 2001 is the year when the many pieces of the HDTV puzzle finally fall into place.

Bet an

Bob Ankosko, Editor in Chief

There's no doubt that the more high-definition video I see, the more critical I become of the faithful old



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FEATURES

82 CES Showstoppers 2001

Xbox vs. PlayStation 2, DVD-Audio vs. SACD, DVD-RAM vs. DVD-RW vs. DVD+RW — the Consumer Electronics Show proved that 2001 will be anything but dull. BY MICHAEL GAUGHN



If you want a high-def TV, but are worried the salesman might talk you into the wrong one, worry no more. Here's advice on how to make the right choice. **BY AL GRIFFIN**

96 Shopping Made Simple: Direct-View TVs

What to look for when you're ready to buy a new direct-view TV. Plus, complete listings for sets 30 inches or larger. **BY MICHAEL RIGGS**

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Finding the right home for all of your audio and video gear.

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A scientist's trip to the future reveals a world where everything ever recorded is available anytime, anywhere.

BY A TIME TRAVELER



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Toshiba's 43-inch HDTV monitor (p. 54), KEF's KHT2005 speakers (p. 58), Sony's eVilla Internet appliance (p. 84), RCA's Internet Radio (p. 112), and Intel's Pocket Concert MP3 player (p. 114). Photo by Tony Cordoza.











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Philips Exclusive! SACD 1000 multichannel Super Audio CD/DVD-Video player

- Toshiba 43-inch HDTV monitor 54
- **58** KEF Exclusive! KHT2005 home theater speaker system
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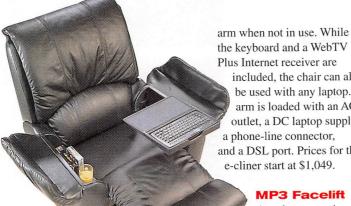






randomplay

EDITED BY BRIAN C. FENTON



You think it's an exaggeration

to say that everyone is trying

Well, consider the Microsoft

WebTV Plus recliner by La-Z-

Boy, otherwise known as the Explorer "e-cliner." It's called

features a keyboard tray for a

wireless Sony WebTV keyboard, which stores in the

"the most technologically advanced recliner to date" and

to cash in on the Internet?

Surfing the

La-Z Way

recliner's

included, the chair can also be used with any laptop. Its arm is loaded with an AC outlet, a DC laptop supply, a phone-line connector, and a DSL port. Prices for the

MP3 Facelift

At a demonstration during the January Consumer Electronics Show, we were among the first to hear music encoded at 64 kilobits per second (kbps) using the new MP3Pro format. Based on informal comparisons with music encoded by ordinary MP3 at the same rate, our initial impressions were favorable. Developed by Thomson Multimedia and Coding Technologies, a spinoff of the Fraunhofer Institute (which created the original MP3), MP3Pro promises faster download times and a neardoubling of the amount of

> music you can fit in a flash-memory player. According to Mark

Redmond, a Thomson vice president, existing MP3 content can be decoded by any MP3Pro player, and music encoded in the MP3Pro format can be played by any existing MP3 player. However, to experience the enhancement you'd need an MP3Pro player. Redmond expects the software to be released this spring. New portables equipped with MP3Pro are expected later this year along with software upgrades for some existing players.

— Michael Antonoff



A lot of people thought DVD was just going to be a higherresolution version of VHS. Wrong. DVD is a new art form — a carnival on a disc, where the feature film is just one attraction. And the best example of that to date isn't T2 or The Matrix but Elite Entertainment's Drive-In Discs, Vol. 1 — a real special edition that gives you a whole night at the drive-in on one DVD.

If you've never experienced a schlocky double-bill under

DELICIOUS HOT DOGS



the stars, here's your chance. Vol. 1 gives you two heaping helpings of Roger Corman horror dreck (Screaming Skull and The Giant Leeches, not that the titles matter), served with

Experience (Artisan)

This two-DVD set contains both Blair Witch movies plus extras. The Blair Witch \$40 Project disc comes with "newly discovered" footage not seen in theatrical release, commentary by the director and producer, and a documentary. DVD-ROM content includes a map, Web links, and dossier excerpts. The Blair Witch 2: Book of Shadows disc comes with a director's commentary, a three-volume set of PC games, and a pewter Stickman necklace suspended from natural twine rope!

Absolutely Fabulous (Warner)

The four-disc complete collection contains all 18 episodes from the three seasons of the British comedy series (730 minutes!), plus a disc of supplementary material. Extras include a faux documentary with the funniest scenes, outtakes, and bloopers, the original "Ab Fab" skit from the French and Saunders TV show, a celebrity cameo-appearance guide, an interactive map of Edina and Patsy's world, and a feature explaining how to be absolutely fabulous.



\$100

The Cell (New Line)

Extras include a commentary by director Tarsem Singh, another with the crew, a "Style as Substance" featurette, and deleted scenes with optional commentary. Interactivities include six multi-angle visual-effects vignettes, an empathy test, a brain-dysfunction analysis, a DVD-ROM script-to-screen feature, plus demo game software (see review, page 122). — Josef Krebs

\$25

some Betty Boop, Popeye, and all kinds of trailers and teasers on the side. Opt for the Distorto surround sound, and you'll hear the movie out of the left front speaker, just like you had one of those industrial-strength, straight-from-a-U-boat jobbies hanging from your car window, while the sounds of crickets, car doors, engines, squealing tires, and amorous lovers come from all around

And if the features don't do anything for you, you can always just play the intermission shorts and try to fathom the '50s obsession with friendly frozen dill pickles, domineering, teasing buns, and submissive, fawning hot dogs. Something for everyone indeed. — Michael Gaughn

It's About Time

Because so many of us back in the 1980s couldn't figure out how to set the darn clocks on our VCRs, the "flashing 12:00" became a symbol of an industry that had lost touch with its customers. So the Sonys of the world came up with onscreen programming and all those neat menus. But some of us couldn't figure out how to use those, either. Then the VCR makers pulled out their ultimate weapon — "autoclock-set" VCRs, which read time data hidden in TV signals and set themselves. Problem solved, right?

You'd think so - until



The apple doesn't fall far from the tree when it comes to the Zappa family. Frank Zappa, who died in 1993, was recognized as an innovative guitar player and adventurous composer with a wickedly clever sense of humor, and the same could be

said of his eldest son, Dweezil Zappa, 31. The unique Zappa stamp is all over Automatic (Favored Nations), an eclectic mix of cover tunes ("Hawaii Five-0") and lightning-fast guitar workouts ("Therapy").

Dweezil can be downright playful when he discusses the ignorance of some recording-studio personnel: "One of the best stories I've heard is where one guy tried to explain, 'This is the part where they flange the VU meters.' Yeah, right. Ever since then, I flange

the VU meters on all of my mixes." Yet he's dead serious when it comes to his disdain for sampling and MP3. Mike Mettler

Is Automatic the record that's here to save the world from bland pop music? Oh, who knows? The thing that's so disconcerting nowadays is that young people have such a limited frame of reference in terms of music, which will happen more and more as songs continue to get sampled. I mean, somebody's gonna hear something and think, "Oh, that's a Puff Daddy song" - yeah, except for the part that was first Led Zeppelin, or first the Police. Kids are going to grow up with Puff Daddy as their biggest influence! To me,

that is just so weird and wrong, because musicianship doesn't exist on those records — it's stolen snippets from good recordings from another era mixed with programming and bad rhyming.

What's your view of the MP3 world?

My problem with technology that allows you to download music at little to no cost is that it makes it pointless for anyone to ever make music again. You get this mentality of people who think, "Oh, I have a computer. I deserve to be able to download this for free." Except that the inherent value of the artists' work is that you make it for someone to purchase it and enjoy it. Hey, it costs money to record music.

You wonder if at some point the downloaders might figure out that

what they're listening to sounds pretty horrible.

Yeah, they get used to that digital clipping sound, that 8-bit sampling rate. The thing is, you could have superior equipment in your audio chain while recording, but it's being mixed down to 16-bit CD anyway, and everything is compressed to the nth degree to make it as loud as possible.

It'll be interesting to find out what you think of DVD-Audio when you get a chance to hear it.

Well, we'll certainly hear the noise floor of everybody's recordings come up. DVD-Audio could be great. But then you listen to a Beatles record and you go, "How'd they make that sound so f--king good?"

VCRs began setting themselves to the wrong time. One problem started when Fox's

L.A. feeds - with Pacific Standard time - were sent out unaltered by local affiliates regardless of where they were located. IEEE Spectrum, the magazine of the Institute of Electrical and Electronics Engineers, reported that and other clock-setting problems late last year and received a flood of letters from around the

country. People reported all kinds of strange problems, not just time-zone or daylightsavings-time shifts.

"Apparently people at some local stations aren't aware they're responsible for [the time signal] or aren't maintaining the equipment," said Tekla Perry, author of the Spectrum article. "The letters don't stop - I get more every week." That's right, good old human error, in the face of which the cleverest engineering in the world is helpless.

Logo to Go

If you see the MultiPlay logo on a DVD player, you can be sure that it'll be able to play an audio CD recorded on your computer. Computer users have learned to rely on the earlier MultiRead logo



DT/ Woderse

The Federal Communications Commission (FCC) prepared for the transition to a new administration — which promptly named Michael K. Powell to replace William Kennard as chairman — with a series of decisions that will affect not only the country's transition to an all-digital TV system but also what you'll be able to watch and record.

- The DTV standard stands. Last year a few broadcasters petitioned the FCC to reconsider the 8-VSB modulation system specified for digital TV, calling it inferior to the COFDM system used in Europe and elsewhere, especially for indoor and mobile reception. While acknowledging that there are some reception problems with 8-VSB, the commissioners declined to change the spec, dispelling a worrisome cloud of uncertainty over broadcasters as well as people considering purchase of a new digital TV. The FCC also denied requests to set performance standards for DTV tuners, saying that doing so could "stifle innovation."
- What about cable? In a major though not totally unexpected - setback for broadcasters, the FCC refused to require cable systems to carry both the digital and analog signals of local stations. Since about two-thirds of U.S. households get TV via cable, that's likely to keep the DTV rollout moving at a snail's pace. What broadcaster would agree to have its analog signals replaced with the digital versions until the majority of the sets out there are digital? For now, most cable customers will have to get DTV some other way. But "the fight is far from over," says Edward Fritts, president of the National Association of Broadcasters, adding that he "welcomes the opportunity to make [his] case before a new FCC and a new Congress."
- Must-carry HDTV? In another setback for broadcasters — but perhaps a boon for high-definition TV (HDTV) — the FCC said

that if a station *does* choose to replace its analog signal with digital, the cable company would have to carry only the primary video and program-related content — and at *full resolution*. Cable companies could strip away multiple standard-definition video signals as well as piggybacked signals for Internet and e-commerce services.

• Your right to record and watch HDTV. You can't buy a cable-compatible HDTV because copy-protection issues *still* aren't settled, and the way things are going, we probably won't like the way they're settled. In late December, the cable industry submitted to the FCC a final draft of its proposed "pod-host interface license," which holds the key to DTV compatibility with digital cable boxes. The filing describes a paranoid scheme called DTCP, for Digital Transmission Content Protection, which could be used not only to prevent copying but to "constrain the resolution" of high-definition programs!

Sending a widescreen HDTV movie through your cable box's analog output to your TV set would downgrade the picture to a maximum resolution of 960 x 540 lines, or about the same as DVD. To enjoy "protected" programming in its full high-def glory, you'd need to feed an encrypted digital signal (via FireWire, most likely) from your cable box to a DTCP-compliant cable-compatible set. Keeping a recording in the digital domain as long as possible is usually a good thing, but this is ridiculous.

Similar technology to degrade the quality of HDTV signals already exists in all highdef DirecTV satellite receivers. The front cover of the manual for RCA's DCT100 tuner reads, "Due to copyright restrictions, you may not be able to view some high-definition programs in high-definition format using this product." Not what I want to learn after buying the product.

— B.C.F.

number of potential microstations by requiring their broadcast frequencies to be more than three channels away from the nearest occupied frequency. The result: not only are there about 80% fewer LPFM licenses overall, but urban areas with crowded radio dials—and the greatest number of potential noncommercial broadcasters—can't have any of them.

So imagine my surprise when, walking down Broadway near the MTV studios, I tuned in what seemed to be a new low-power station at 88.1 MHz — one that sounded suspiciously like MTV. The FCC confirmed that no broadcasts have been authorized on 88.1, but Viacom — a broadcasting giant that owns MTV and more than 150 full-power radio stations, including six in New York - isn't bothered by this low-power station. Adding insult to injury, it's rebroadcasting the audio from TV commercials in the noncommercial portion of the FM band! Not even a radio pirate would be so brazen.



Sega is ceasing production of its Dreamcast game console and will instead become "a platform-agnostic game publisher." But U.K.-based Pace Micro Technology has developed a "digital TV home gateway" or set-top box. It won't have a disc drawer for playing Dreamcast discs, but it will be compatible with Dreamcast games downloaded "in about 3 minutes" over a broadband connection.

Broadcasting Hubris

The Telecommunications Act of 1996 removed limits on how many TV and radio stations an individual or corporation could own, prompting a flood of media mergers and station buyouts. To help restore some diversity, former FCC Chairman William Kennard championed low-power FM (LPFM), which

he thought would give a voice to schools, churches, and community organizations that are now unrepresented on the air.

The new LPFM service was to be exclusively noncommercial, limited to tiny 10- or 100-watt stations. Nonetheless, the broadcast lobby — one of the strongest in Washington — fought vigorously against it, and Congress slashed the

Optical Storage Technology Association — has released the MultiPlay specification to ensure compatibility for *all* recordable CDs, whether burned on a personal computer

or an audio recorder.

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DVD-A, Yea and Nay

While I am in awe of its sonic and technical wizardry, in my opinion DVD-Audio is going to be D.O.A. in the marketplace. When the CD came along, it was the greatest sonic and technical advancement in audio since magnetic tape. But what made it such a hit was the quantum leap in convenience.

I know a number of people who'll spend two hours watching a videotape or DVD, and some who are enthralled by the 5.1-channel sound from their DVDs. But I don't know a single person who sits in front of his stereo system and listens to music. We listen in our cars, on the beach, in the park, on airplanes, and in our homes while we do other things. For us, the sonic improvements of DVD-Audio are a nonevent.

Herb Goldman

Burbank, CA

By looking for DVD-Audio to somehow equal the CD in importance, Mr. Goldman is asking it to take on a burden it was never meant to carry. DVD-Audio was designed to be the audio complement to DVD-Video — it's that simple. To do that, it has to be able to play in car and portable players without the use of a video screen. At the same time, it offers higher resolution and multichannel playback for peo-

ple whose systems can take advantage of these features. CD and DVD-Video do offer some of these advantages, but neither brings them together in one disc — DVD-Audio does.

Last issue, editor in chief Bob Ankosko asked readers about their experiences with DVD-Audio. Well, here are mine: It's *spectacular! Sensational!* With my JVC player, the artists and musicians are *there* in the room with me! This is *without a doubt* the state of the art in music reproduction! As Bob so aptly put it, "Move over CD"!

Nick D. Neighbour

Pasadena CA

Pasadena, CA

Stereo Forever

Because of a very unfortunate error at our printer, the following letters that were supposed to appear on page 18 of the February/March issue were omitted. — Ed.

I fully agree with Craig Brewster's "What About Stereo?" in January "Feedback." Many of us are still into good old realistic stereo and would like to see more reviews of two-channel equipment. Your response asked, "Why deprive [yourself] of multichannel surround sound?" I do not feel deprived at all, and I do not buy into this multichannel myth. My wife and I like to attend jazz concerts and music festivals. Maybe you folks haven't noticed, but musicians are almost always up front on stage. We hear and enjoy the music from that soundstage - not from the sides or rear. As far as I'm concerned, this multichannel music thing can take the same route as quadraphonic sound did. Steve H. Karsten

Suisun City, CA

I thought reader Craig Brewster made a valid point with his gripe about there not being enough two-channel reviews in your magazine. I'm also a little disturbed with your suggesting that the problem is the reader's fault for not having converted over to multichannel sound. Like several of my friends, I own a high-end stereo system, and we wouldn't think of changing over. We have DVDs, too! Some of us like to read about trends but in reality still prefer two-channel sound.

Jim Schackow

I searched the masthead but could not find

Gainesville, FL

condescending response to Craig Brewster's January letter, "What About Stereo?" As if from Olympus, the unknown editor decreed that we poor souls who listen to music in two-channel stereo are pitifully deprived. I don't have space for a half-dozen or so speakers strewn about my listening room. And what's more, there is no need for more than one pair of speakers to properly reproduce the music. The homemade speakers I use are flat to well below 20 Hz so that *all* of the music is available in stereo, as it should be.

For our mystery editor to classify Mr. Brewster — and by logical extension, me — as "deprived" of something he considers to be "superior" is the height of self-assumed omniscience without hint of validation. The only "deprivation" here is the lack of reviews of high-quality, two-channel electronics and speakers, which still represent the nearest thing to the sound of real music that can be recreated in the home.

Ed Heath Lexington, IN

Editor in chief Bob Ankosko replies: Our published responses to letters are often a collaborative effort, and that was the case here. It was certainly not our intention to insult anyone, but after rereading our response to Mr. Brewster, I agree that it does come off as a bit smug - then again, the tone of Mr. Brewster's letter was pretty sarcastic. If we hadn't been carried away by our enthusiasm for the potential of multichannel recording, we would have chosen our words more carefully. We hope that anyone who appreciates great music over a great stereo system — which includes the editors of this magazine — will be open-minded enough to give multichannel music a chance before writing it off.

I thoroughly enjoyed the articles on DVD-Audio in your February/March issue, especially the interview with Neil Young, who seems to know a lot about what formats sound good. Like him, I used to listen to music for hours at a time when LPs were king, but I hadn't really noticed that I don't do that anymore, even with much better equipment. He may be right that CDs aren't capable of reproducing all of the music.

I look forward to hearing DVD-Audio after the initial bugs are worked out (thanks to David Ranada for bringing the bass-management glitch to our attention). I'm sure I'll be purchasing a DVD-Audio player and will enjoy, once again, turning down the lights and listening to full, pristine high fidelity as it was meant to be heard.

Dave Salinas

Lansing, IL

We, too, welcome the arrival of DVD-Audio, but just for the record, we don't share Neil Young's anti-CD views.

We are disappointed by your coverage of the high-resolution digital audio formats, Super Audio CD (SACD) and DVD-Audio. Your February/March issue reveals a blatant bias in favor of DVD-Audio. To date, SACD has had a much more successful rollout in every way, yet it receives nowhere near the coverage dedicated to DVD-Audio in your publication.

The parties responsible for bringing us SACD have done so in an effective manner, mindful of consumer concerns. In contrast, the DVD-Audio forces have snubbed consumers time and again. Their decisions — for example, inclusion of a digital "watermark" that was proven to be both audible and hackable, bass-management problems, and the lack of stereo 192-kHz/24-bit capability — reveal an appalling lack of concern for the optimization of high-resolution digital audio.

Many are looking to your articles to clear up the differences between the formats.

the editor responsible for the arrogant and

Please provide more balanced and accurate coverage. Those of us investigating these formats are extremely disappointed in Sound & Vision's reporting and believe your magazine is being used as a tool to thrust an inferior format upon your readers. **Gregory Maltz** Sunnyvale, CA

To give extensive coverage to the launch of a new format hardly shows "blatant bias." SACD would have received similar attention if it had been introduced as a multichannel format — and thus with some relevance for anyone beyond the small group of people who could afford the \$3,000 to \$5,000 twochannel players that have been available for the past two years. We probably wouldn't have received this well-intentioned but kneejerk response - signed by 24 people in addition to Mr. Maltz — if the petitioners had looked beyond the February/March issue and considered our coverage of SACD as a whole.

We have covered SACD and will continue to do so with the same critical scrutiny we've given DVD-Audio. See, for instance, Ken Pohlmann's reviews of Sony's flagship SCD-1 in September 1999, the Sony DVP-S9000 in January 2001, and the first multichannel player — from Philips — on page 49 in this issue.

Bottomless Pits

Thank you, David Ranada, for pointing out the problems in hearing bass from a DVD-Audio disc (February/March "Tech Talk"). When I read your column, I was in the process of tearing apart and troubleshooting a newly installed surround system that includes five small speakers and a powered subwoofer. Why? Because the system sounded great until a couple of new DVD-Audio discs arrived.

The first, Beethoven's Symphony No. 9, sounded sterile, arid, and lifeless. "Could the recording be this bad?" I wondered. I then tried a 96-kHz/24-bit DVD-Audio disc I'd previously played (downmixed from five to two channels) on my 10-year-old stereo setup, where it had stunning detail, soundstage, imaging - you name it. This same disc sounded just as bad as the Beethoven on my new multichannel system. Since DVD-Audio discs lack a discrete bass channel, my subwoofer was getting nothing from my processor's subwoofer output.

My solution to the problem was to set the processor's front left and right channels for "large" speakers and feed the output to the speaker-level connections on my sub. The disadvantage is that my processor's bass management is defeated. When will the industry wake up? The average consumer isn't going to go through what I did to hear multichannel Ralph lannuzzi music.

Cold Spring Harbor, NY

David Ranada replies: Mr. Iannuzzi's suggestion will enable the bass to come out correctly at least for the left/right front channels - his is one of several partial solutions to the bassmanagement problem I've heard about since my column appeared. However, instead of any such "kludge," I'd recommend waiting for either a bass-management accessory box (they are in the works, I've heard) or a DVD-Audio player with the necessary circuits built in.

HDTV Despair

I recently bought a high-definition monitor and satellite receiver but now find I can only watch three high-def channels via satellite. There are no over-the-air digital broadcasts in my area other than PBS, so I haven't yet bought an HDTV tuner module.

It was very discouraging to read, in Al Griffin's "DTV Report Card" (February/ March), that the DirecTV satellite service won't add any channels until more subscribers own high-def sets. Do the broadcasters and satellite services really think millions of people are going to go buy this expensive equipment and then sit around waiting for them to add channels? **Scott McNair**

Kansas City, MO

The HDTV picture is definitely fuzzy at the moment. For a DTV update, see page 18, and for the latest on HDTV from CES, see page 85.

I can't avoid noting the glaring similarities between the behavior of all parties involved in the DTV rollout and that of the Florida lawmakers in the 2000 presidential election. Both had years to prepare, and both produced hundreds of pages about being ready for the Big Moment. And yet, when the time came for an organized and accurate recount, the entire state of Florida could find no standards for getting the job done. DTV and HDTV are the dimpled (or pregnant or hanging) chads of the TV broadcasting and manufacturing industries.

Having looked forward to HDTV for over ten years, I can only give an F to all sides for delivering the equivalent of vaporware - and for having the audacity to charge the high costs for their open-ended R&D to a small and increasingly uneasy crew of early adopters. Do I want HDTV? Yes. Will what we've seen so far make it harder to create a system that works physically, ethically (copyright controversies), and financially (read: affordable by ordinary TV viewers)? Yes. Will everything come together within the next five years in a seamless package of hardware and software, giving us pristine images with plug-and-play **Nick Bandouveris** ease? No way. New York, NY

Your recent report on the status of DTV was very good, but you overlooked what could be the most important factor in the rapid acceptance of DTV by consumers. If a high-definition VCR were available for under \$500 and movies were released on tape in high-def, HDTVs sales would skyrocket.

Watching The Drew Carey Show in high-



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ILLUSTRATION BY JACK GALLAGHER

The Big Picture

Michael Antonoff's "Movies Behind Bars" (February/March "Off the Air") generated a tremendous amount of mail, most of it assailing him for writing that he doesn't like watching widescreen movies on his relatively small TV. Many saw his tongue-in-cheek column as a statement of Sound & Vision's position on letterboxing vs. panand-scan, which it was not, and ignored that we had run an educational article called "This Is Widescreen" in the preceding issue (January 2001).

Our position is that, ideally, home theater aims to recreate the best parts of the moviegoing experience (just as high-fidelity audio aims to recreate music as accurately as possible) — and that includes

watching movies in their original aspect ratios. But we also recognize that reality often falls short of the

ideal: many people have to set up their home theaters in small rooms, can't afford large, widescreen displays, or use their systems mainly for casual viewing, so they are willing to make compromises that videophiles consider unreasonable.

Until widescreen TVs become more common, the best solution would be for Hollywood to put both wide- and full-screen versions of movies on every DVD.

— Ed.

"Forget for a minute that you're a videophile," Michael Antonoff urges us in the opening of his misguided rant, "Movies Behind Bars." *Forget?* How? For the pan-andscan version to be considered superior, yes, I suppose you *have* to "forget" that such ruinous editing casually lops off the sides of the original's carefully composed pictures. We're talking about *art* here, not two-by-fours from the lumber yard!

Mr. Antonoff's logic would have us force Leonardo's *The Last Supper* into a square frame. Heck, who cares about those two or three extra apostles at each end of the table anyway, right?

When I watch a movie, I want to experience everything the director wanted me to experience. I want to see Thelma and Louise, not Thelma or Louise.

Conrad Felber
Sudbury, Ontario

"Movies Behind Bars" distressed me greatly. Rad Bennett's "This Is Widescreen" in the January issue showed a better understanding of widescreen vs. pan-and-scan. While Mr. Bennett didn't come out on one side or the other, he did suggest that you should at least take a look at widescreen versions of movies and consider why many people think that presenting a movie in its proper aspect ratio is the best way to view it. Larry Bevil

Kingsport, TN

I agree with Michael Antonoff. Widescreen DVD movies waste a lot of real estate on my 48-inch TV. As long as widescreen images are reasonably cropped in the pan-and-scan process, the result is a perfectly enjoyable way of watching movies at home.

Roger Chan Richmond Hill, Ontario

Sound & Vision is a superb publication, but I find some of your recent comments on letter-boxing oddly askew. Generally, the better the film, the more knowledgeable the filmmakers, the worse a widescreen film will transfer to pan-and-scan. Michael Antonoff seems to say that any material outside of a 1.37:1 as-

pect radio is extraneous — just filler to make the image wider. This couldn't be further from the truth when dealing with any of the top directors of photography.

I've been fighting since the advent of home video to get letterboxing accepted both in the home and on television. As part of an agreement with CBS, I had the unenviable duty of creating the current pan-and-scan version of *My Fair Lady* (which was originally shot 2.221:1) while concurrently making cuts to fit the film into a network time slot. Some of the cuts became easy once it was panned and scanned because entire sequences then had no meaning whatsoever.

Home video is a representation of an art form that is more properly experienced on a huge screen with an audience. No one is forcing your readers to go out and buy or rent a DVD or a VHS tape, or to watch them on a small screen. I acknowledge that not everyone can afford a projection TV system — but the alternative is to actually go to the theater.

You might better serve your readers by educating them on the advantages of a widescreen image as opposed to denigrating a viable alternative to viewing an artwork.

Robert A. Harris The Film Preserve New York, NY

Robert Harris has restored such classic films as Lawrence of Arabia, Vertigo, Spartacus, and My Fair Lady. The complete text of his letter, which appears here edited for space, can be found on our Web site.

Thank you for "Movies Behind Bars"! It's about time someone expressed the sentiments of the everyday videophile. I would love to have a 16:9 screen so I can experience the director's "vision," but at today's prices that isn't going to happen anytime soon.

Steve Revella Scottsdale, AZ

Michael Antonoff is certainly entitled to his opinion regarding "letterboxing." But I think we have a right to expect the technology editor of **Sound & Vision** to promote the *best*

technology, not decry his own inability to appreciate it.

Fletcher G. Shives

Seattle, WA

Is Michael Antonoff for real? I'm guessing most of your readers like widescreen. The mob he writes for probably doesn't read this magazine.

Jeff Thorstad
Minneapolis, MN

I was dismayed by "Movies Behind Bars." If a well-respected publication like **Sound & Vision** doesn't fully support movies being released in their original aspect ratios, how can we expect the general public to do so?

Wesly Moore Pasadena, CA

Thank you, Michael Antonoff! Finally someone is speaking up for the "unwashed masses." I recently upgraded my TV from a 32-inch direct-view to a 61-inch rear-projector, in part to help compensate for the varying aspect ratios of DVDs. But even with a screen of this size, I still find myself being driven to distraction by the minimized image and those infernal black bars. Is it too much to ask the studios for a pan-and-scan version of the movies they release?

Craig Holly

Gladwin, MI

Recently, my local PBS station showed a pan-and-scan version of the CinemaScope film *That Touch of Mink*. During one scene in a car, I commented to a friend who was watching it with me, "Oh, look — two noses are having a conversation!" He replied, "Huh?" My friend and your Michael Antonoff would get along splendidly!

Christian Moreau Washington, DC

I am interested in the objective analysis of equipment, software, and formats — not biased, one-sided opinions. If Michael Antonoff wants to bandy about his bad personal taste and unfounded assertions, tell him to write a letter to the editor like the rest of us.

Benjamin Henry Wichita, KS

feedback

def may not add much to the TV viewing experience, but being able to see a movie like *The Patriot* in widescreen high-def with a digital soundtrack would. Even if HDTV broadcasts weren't available, many people would buy a digital TV just to watch rented movies.

The lack of high-def VCRs and videos is due not to any technical obstacles but to *greed*. Hollywood is blocking the release of movies in high-def while they try to devise a scheme to charge a fee for every viewing.

David Stevenson Henderson, NV

JVC plans to introduce a high-definition D-VHS VCR later this year.

Have the cable companies and TV manufacturers decided on a format for cable HDTV? If so, will it be transmitted through the standard coaxial cable already in most homes or new cables resembling component-video connectors? Will HD-ready/compatible TVs need a cable-converter box? And how will people receive off-air TV signals after January 1, 2006?

Jason M. Hoffman West Lafayette, IN

The cable standard is still being negotiated (see page 18 for details). It's likely to use ex-

isting cable, but you'll need a new converter box. As for the FCC's original 2006 deadline for the DTV changeover — don't lose any sleep over it. Congress has ruled that analog broadcasts won't be discontinued in any market until 85% of households in that market have DTVs or are able to watch DTV signals via a converter box or cable access.

Top 10 CDs

A hearty slap on the collective back of those responsible for choosing S&V's Top 10 CDs of 2000 ("Entertainment Awards," February/ March issue). I'm feelin' really in with the incrowd right about now as eight of my Top 10 matched yours. I congratulate us on our great taste in music! I would replace Sleater-Kinney (never did get them) and Warren Zevon (good, but not great) with the mostly overlooked Grandaddy's The Sophtware Slump (a great alt.folk/electronic man vs. techno thing) and the Jayhawks' criminally overlooked Smile (songwriting, arranging, and harmonies to die for, with more hooks than a bass-fishing tournament!). I highly recommend both and look forward to other readers' suggestions for missing Top 10s so we might all get turned on to some more great music. George Bennett Ocala, FL

Corrections

In January's spotlight comparison of four home theater speaker systems ("Suite Sextets"), Daniel Kumin said none of the subwoofers filtered signals sent to the front left/right speakers. In fact, JBL's PB10 has a fixed 150-Hz 6-dB-per-octave high-pass filter in line with its speaker-level outputs.

In January's test report on the Toshiba SD-2300 DVD player, David Ranada said it was the first player he had encountered "that lets you store a selected frame from a DVD in flash memory." Sony, however, introduced its Picture Memory feature about two years ago.

The wattage figure given for the measured output at clipping, five channels driven, of the Kenwood VR-410 A/V receiver on page 116 of the October 2000 issue was a misprint. It should have been 44 watts, not 126 watts (the 16.5-dBW figure given was correct).

We welcome your letters. Write to Editor, Stereo Review's Sound & Vision, 1633 Broadway, New York, NY 10019; or e-mail soundandvision@hfmmag.com. Please include your name, street address, and phone number for verification; only your name, city, and state/country will be printed.

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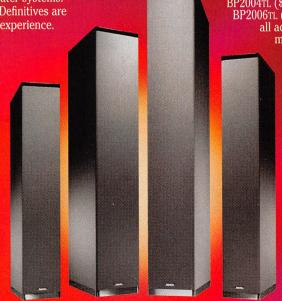
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new products

Hot gear from the world of home entertainment



Samsung

You won't need an outboard high-definition TV decoder when you've got Samsung's HCJ655W rear-projection HDTV — the 65-inch widescreen set has a fully integrated high-def tuner. After it upconverts standard NTSC and lower-resolution digital signals to the 1080i format, three 9-inch CRTs project the image on the screen. A wideband component-video input handles progressive-scan signals from a DVD player or high-def satellite receiver. There's also a standard component input, three composite- and two S-video inputs, and a coaxial digital audio input for DVD soundtracks, which are processed through a built-in Dolby Digital decoder and played through three speakers powered by 15 watts each. (Rear-panel line-level outputs for the surround and LFE or "subwoofer" channels are also provided.) A universal remote control is supplied. Price: \$8,499. (800-726-7864, www.samsungusa.com)

RCA

The RCU810 universal remote control from RCA not only operates most components from RCA, ProScan, GE, and General Instrument but can also learn a thing or two from your other remotes, whatever the brand. The wand can control up to eight devices — DVD and CD players, TVs, satellite receivers, A/V receivers, VCRs, and cable boxes — and programmable macro keys let you issue a whole series of commands at the touch of a single button. The LCD screen displays setup instructions, and switchable backlighting makes it easy to use the remote in the dark. Price: \$70. (800-336-1900, www.rca.com)



Denon

A three-CD carousel, 30 watts per channel, 40 AM/FM radio presets, and two Mission speakers — that's Denon's D-M50 stereo minisystem by the numbers. The changer/receiver includes a clock with an alarm timer, auxiliary inputs and outputs, and an optical digital output for CD recording. The ported MS-50 speakers are 9½ inches high, and their woofers are placed above their tweeters, which is said to provide better vertical dispersion along with smoother phase and frequency response. A remote control is supplied. Price: \$599. (973-396-0810, www.del.denon.com)



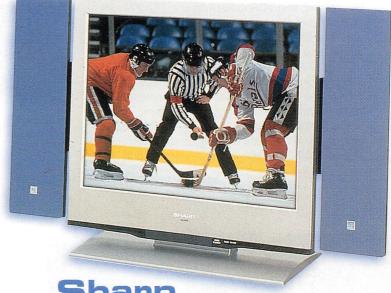
Hitachi

You provide the lights and action — Hitachi's got the camera: the VMD965LA camcorder. It records in the Digital 8 format but can play back Digital 8, Hi8, and 8mm tapes. Just point the 46-mm lens at your subject, and the image is displayed on both the 2½-inch LCD screen and the color viewfinder. Electronic image stabilization and defeatable auto focus help you achieve a clear, steady picture. You can get creative with its five digital effects, while 22x optical and 500x digital zooms help you zero in on your target. The cam has an S-video input and output as well as a remote control. Price: \$800. (800-448-2244, www.hitachi.com)

TAG McLaren

The leaning speaker of TAG McLaren, the F1 Avant-Garde, veers far from conventional designs. Built with the idea that a speaker cabinet should have no right angles or parallel surfaces, the curvaceous F1 has a black composite enclosure in which stiff inner and outer layers sandwich a flexible core. The ported four-way speaker has 10- and 7-inch woofers, both with carbon-fiber-loaded paper cones, a 6-inch paper-cone midrange, and a 3/4-inch silkdome tweeter. Frequency response is rated as 33 Hz to 20 kHz ±2.5 dB. Overall dimensions are 133/4 x 45¹/₄ x 17³/₄ inches, and each F1 weighs 143 pounds. Price: \$30,000 a pair. (888-293-9929, www.tagmclarenaudio.com)





Sharp

Proving you don't have to use plasma technology to get a flat, thin screen, Sharp's 20-inch LC-20A2U has a liquid-crystal display that's said to give a clear picture over a wide 160° viewing angle. Even though the 28 x 16-inch platinum-finished frame is only 2 inches deep, there's still room for a standard 181-channel tuner and a 3-D digital comb filter. The grille covers for the flat speakers attached to the sides come in a choice of black, blue, or red. Connections include S-video and standard component-video inputs, two composite-video inputs, stereo audio outputs, and a headphone jack. You can hang the 23-pound set on a wall with an optional bracket. Price: \$5,999; wall bracket, \$250. (800-237-4277, www.sharp-usa.com)

NOTE All prices and product information are supplied by the manufacturers. Dealer prices may vary.

new products



Panasonic

Combining the three devices most people use to watch video, Panasonic's PV-DF2700 is a TV, DVD player, and VCR rolled into one. The 27-inch set uses Panasonic's Tau PureFlat picture tube. The DVD player has an optical digital audio output, and the four-head VHS deck features VCR Plus. An automatic gain control ensures that programs from different sources played through the built-in stereo speakers are heard at equal volume. Two-tuner picture-in-picture, virtual surround sound processing, an FM radio and an alarm clock are also onboard. Price: \$1,300. (800-211-7262, www.panasonic.com)



Rotel

The RDV-995 DVD player from Rotel is descibed as a "sophisticated CD and CD-R player that just happens to play DVD discs." It has single-bit digital-to-analog converters to process audio with 24-bit/96-kHz resolution and a 10-bit/27-MHz video digital-to-analog converter for video. There are component-, composite-, and S-video outputs as well as a coaxial digital audio output. You can toggle the player between NTSC and PAL video by flicking a rearpanel switch (though *Doctor Who* fans will lament its inability to defeat regional coding), and it can operate with any power-line voltage from 100 to 250 volts at 50 or 60 Hz. A full-function remote control is supplied. Price: \$899. (978-664-3820, www.rotel.com)

StudioTech

Does your home theater need a home? StudioTech's modular Ultra U60-EC shelf system should give your components all the space they need to stretch out: its 5-foot-tall side cabinets are 24½ inches wide and 23 inches deep, and the central cabinet is 45 inches wide and 22 inches tall, so there's space for even the largest direct-view TV. Each ¾-inch-thick shelf is held with sturdy brass supports on interior steel corner posts, which also keep your cables out of sight. The Ultra line is available in rosewood, natural cherry (shown), and dark cherry finishes. Carpet spikes are included, rolling casters optional. Price: \$2,900. (800-887-8834, www.studiotech.com)

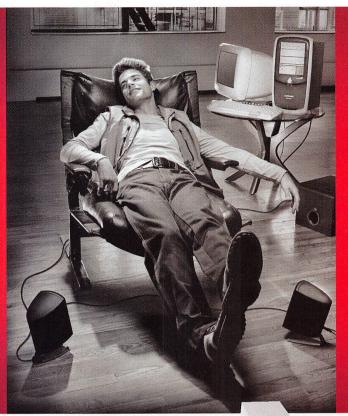


Harman Kardon

The HKTS 2 system from Harman Kardon includes everything you'll need for a home theater speaker system, right down to the cables. The four left/right satellite speakers each measure 3½ x 4½ x 3¾ inches and combine a 3-inch polypropylene-cone woofer with a ½-inch polycarbonate-dome tweeter. The dual-woofer center speaker comes with an adjustable mount. All of the magnetically shielded satellites are charcoal colored with matching grilles. The ported subwoofer has a 10-inch driver, a 100-watt amplifier, speaker- and line-level inputs, and a level control. Harman Kardon also throws in wall-mounting brackets for the L/R satellites. Price: \$449. (800-422-8027, www.harmankardon.com)







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Toshiba

The MT2 video front projector from Toshiba is summed up by three Ls: lightweight, low-cost, and LCD. The MT2 uses a triple-panel LCD for improved color saturation and corner-to-corner sharpness. Connected to an outboard high-definition TV tuner, it can display images with enhanced-definition (EDTV) quality at a resolution of 800 x 600 pixels. The MT2 weighs only 8 pounds, so it should be no problem moving it around your room to find the ideal spot. It also has a digital keystone-correction function to square up the picture even if you have to aim the projector at an angle to the screen. There are RGB (VGA), composite-, component-, and S-video inputs. Price: \$5,000. (800-631-3811, www.toshiba.com)



Edge Audio

For an affordable subwoofer in a rigid, 1-inch-thick solid hardwood enclosure richly finished in cherry or walnut veneer, look no further than Edge Audio's SW-8. The compact powered sub has an 8-inch long-throw driver, and its amp is rated to deliver 150 watts continuous. Frequency response is rated as 32 to 130 Hz ± 3 dB, sensitivity as 86.75 dB, and the crossover is variable from 50 to 150 Hz. Both speaker- and line-level inputs are provided to ease hookup to your system. The 9 x 16 x 17-inch SW-8 weighs about 35 pounds. Price: \$349. (503-598-8815, www.edgeaudio.com)



Cerwin-Vega

Cerwin-Vega's RL speaker series has four models ready for different duties. The three-way RL-18P tower has a built-in 8-inch subwoofer with a 100-watt amplifier. A 1-inch soft-dome tweeter handles the highs, and a 6-inch paper-cone driver covers the midrange and upper bass. The two-way RL-16M, with a 6-inch woofer and the same tweeter, can be either a surround speaker or the main speaker in a stereo system if used with a subwoofer like the RL-28W, which has dual 8-inch drivers and a 200-watt amplifier. Completing the line is the RL-25C, a center speaker with two 5-inch woofers and a 1-inch tweeter. All are magnetically shielded. Prices: RL-18P, \$500 each; RL-28W, \$500 each; RL-16M, \$150 each; RL-25C, \$250. (805-517-8399, www.cerwinvega.com)



Sonic Sense

It can be a challenge to record topnotch digital audio out in the field, but Sonic Sense's AD2k+ portable analog-to-digital converter can ease your tape recordings into the digital domain. The sampling rate can be varied between 44.1, 48, 88.2, and 96 kHz, and the bit rate is also variable. There's a two-channel input and four outputs; all four output signals can use the same word length, or two can be 24 bits and the other two 16 or 20 bits. The DC-powered unit weighs 2 pounds and measures 8 x 13/4 x 5 inches. Price: \$1,795. (877-324-4463, www.sonicsense.com)

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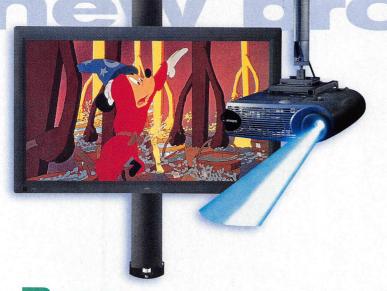
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Draper

Whether you want more flexibility with your front projector or fancy putting your plasma screen on the ceiling, Draper has an Aero Mount for your high-tech TV. The matte black plasma mounts let you tilt the display by up to 20° and have hollowed channels to hide cables. For LCD and DLP front projectors, the Aero Mounts can tilt the projector up, down, left, or right by up to 30° as well as rotate it a full 360°. Prices: LCD/DLP mounts, \$400 each; plasma-screen mounts, \$300 to \$1,000 each. (800-238-7999, www.draperinc.com)

McIntosh

The MHT100, McIntosh's first multizone home theater receiver, is rated to deliver 100 watts each to six channels in the main zone and the same for two channels in a second zone. There are separate tone controls for each zone, and independent remote control is possible with optional infrared keypad connections. An RS-232 port and 7.1-channel analog inputs allow for future upgrades. The back panel of the 17½ x 9½ x 20-inch, 75-pound receiver has three optical and three coaxial digital audio inputs, composite- and S-video connections, two assignable component-video inputs, and a component-video output. A backlit remote is supplied. Price: \$5,000. (888-979-3737, www.mcintoshlabs.com)





Parasound

Parasound has a new line of in-wall/in-ceiling speakers that want to be your PAL, which stands for Precision Audio Loudspeakers. The four full-range speakers are led by the PAL-380, with an 8-inch Kevlar woofer and a pivoting baffle that holds a 2-inch soft-dome midrange and a 1-inch aluminum-dome tweeter. The PAL-280 (shown), 265, and 245 are two-way models with 8-, 6½-, and 4½-inch woofers, respectively. The center-channel PAL-360 has dual 6-inch woofers and the same tweeter/midrange configuration as the 380. Three two-way in-ceiling models, the PAL-80, 65, and 45, have 8-, 6½-, and 4½-inch woofers, respectively. The 10-inch PAL-1002 in-wall subwoofer completes the picture. Prices: \$400 to \$800 a pair; PAL-1002, \$400. (415-397-7100, www.parasound.com)

Monsoon

If the half-life of your old multimedia speakers has passed, bring your PC to surround sound civilization with Monsoon's MM-2000 system. The sonic adventure starts with four dipole-radiating planar-magnetic satellites, each measuring 4 x 8 x ½ inch. The 13 x 10 x 10-inch sub will quake you with its 6½-inch driver and passive radiators, which take the frequency response on a descent to 35 Hz. Each satellite comes with a stand, and a supplied command module provides volume and bass controls, a headphone jack, a channel fader, and a mute button. Price: \$299. (877-722-8346, www.monsoonpower.com)



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If you want to calibrate your sound system with scientific precision without lugging an oscilloscope into your listening room, Sencore's SP295 SoundPro audio analyzer can help. The versatile device can measure sound-pressure level, let you identify sound dispersion in a room, analyze background noise, test cable connections, generate test signals, and more, providing results on a backlit 64 x 128-pixel LCD screen. The SoundPro measures 6 x 103/8 x 3 inches. weighs 3½ pounds, and runs on either a 6volt rechargeable lead-acid cell or from the supplied AC adapter. Price: \$1,995. (800-736-2673, www.sencore.com)



Accuphase

The C-290V stereo preamplifier from Accuphase (distributed in the U.S. by Axiss) is an upgrade of its admired C-290 preamp. It offers five unbalanced and three balanced stereo inputs, and an optional module provides two pairs of phono inputs. Separate input and output stages for each channel are said to prevent any unwanted interaction between them. The balanced output uses a bridgedfeedback design that's isolated from the ground line. A persimmon wood cabinet surrounds the chassis. Price: \$14,995. (310-329-0187, www.axiss-usa.com)



Sencore

Phase Technology

Thanks to its built-in powered subwoofer, the Teatro 11.5 tower speaker from Phase Technology has a frequency response rated down to 30 Hz and out to 20 kHz ±3 dB. A servo-controlled amplifier is rated to deliver 75 watts to the 10-inch long-throw subwoofer, which has both speaker- and line-level inputs. The company's Absolute Phase crossover is said to ensure that the subwoofer is always acoustically and electronically in phase with the 51/4-inch midrange driver and the 1-inch soft-dome tweeter. The magnetically shielded Teatro 11.5 measures 7 x 40 x 16 inches, weighs 60 pounds, and is available with a rosewood or black ash laminated finish. Price: \$1,300 a pair. (888-742-7385, www.phasetech.com)

Fellowes

You can spread out your electronic equipment a bit with Fellowes' Split-Surge Superior Workstation surge protector. There are ten electrical outlets on the 11 x 6 x 2½-inch megaplug, which can be split into two five-outlet banks connected by a 4-foot cord. The unit features noise filtering as well as phone-line protection and is rated to protect against surges up to 1,430 joules. Price: \$45. (630-893-1600, www.fellowes.com)

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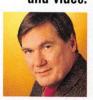
Q&A IAN G. MASTERS

The Best TV

Q. I'm ready to buy a new TV and was wondering which is better: direct-view or rear-projection? **Mark Margevicius** North Royalton, OH

A. A lot of people feel that, good as they are, rear-projection TVs (RPTVs) that use cathode-ray tubes (CRTs) fail to deliver a picture as rich and clear as from a directview set. Among other things, RPTVs can suffer from hot spots and color-fringing caused by drifts in the alignment of their three CRTs. But the gap between the best examples of either type is narrow enough that you should consider both. Rear projec-

Expert advice on everything theater, audio.



tors have it all over direct-view sets when it comes to creating a satisfyingly large image about home for watching movies. While Sony plans to introduce a 40-inch (diand video. agonal) direct-view set later this year, and RCA offers a couple of 38inch widescreen directview HDTVs, the biggest 4:3 screen directview sets today are 36 inches. RPTVs, in con-

trast, range from 40 inches to an impressive but space-hogging 73 inches.

When Loud Is Too Loud

Q. I've heard that you should never turn the volume knob on an amplifier or receiver past the 12 o'clock position or you risk blowing out your speakers. I recently bought my daughter a receiver with a digital readout and no detents on the volume-control knob. She blew out both woofers and one tweeter on her speakers, even though their rated sensitivity is 93 dB. Now that I've had the speakers repaired, what volume setting should she use in the future as the "do not exceed" level? J. Mark Battison

Brighton, MI

A. Wow! She'd have to be making one helluva racket to blow out the woofers on a pair of 93-dB speakers. Maybe now that the speakers are fixed she should make an appointment with an audiologist.

I've never heard of the 12 o'clock rule, but like most such rules, it's nonsense.

What comes out of speakers at a given position of the volume knob is a product of many factors: the amplifier's gain, the speakers' sensitivity, the output level of the source device, and the level of the recording itself. A "safe" level might be a 12 o'clock setting on one system but only 9 or 3 o'clock on another. There's no universal rule — but it is possible to get some idea of the limits of a particular system.

Start by listening to music at a comfortable level, and gradually turn the volume up until either the music distorts audibly or you find the volume too uncomfortable. If you do hear obvious distortion, note the pointer position or readout numbers and set your limit a couple of notches below that. If it's not distorting but you already can't stand the volume, the equipment is probably not at risk. Either way, respect the limit you've discovered, even when the room is full of partying friends and the temptation to crank the amp up a few more decibels is strong. The speakers don't know guests are present and will fry regardless.

Going 6.1

Q. I'd really like to take advantage of DVDs encoded in 6.1-channel Dolby Surround EX, but I don't want to spend a couple of grand to upgrade my 5.1-channel receiver. Do you know of a less expensive add-on unit that will do the same thing?

Tony Cannizzaro Wharton, NJ

A. Sure. An el-cheapo solution has been described several times in these pages. In Dolby EX, the sixth channel, which drives one or two speakers centered in the rear of the listening area, isn't discrete like the other main channels, but derived from the existing left and right surround channels in the same way the center channel is derived in Dolby Pro Logic (DPL). If you have an old DPL receiver gathering dust in the basement, you can use its decoder.

Feed the surround-channel preamp outputs on your 5.1-channel receiver to the two-channel inputs of the DPL receiver, and switch the latter to Dolby 3 mode. Attach your three surround speakers to the front left, center, and right speaker terminals of the DPL receiver. A little experimentation with levels, et voilá! - 6.1channel sound. (This will also work with DTS-ES soundtracks, though with an ES Discrete recording you'll get a matrixed rather than discrete signal for the sixth channel.) If you don't have an old Pro Logic receiver, there are accessory products from Parasound and Audio Design Associates that will do the upgrade job for you.

Digital Light Processing

Q. What is Digital Light Processing (DLP), and is it a significant advancement in television display technology?

Lloyd Klibert Kenner, LA

A. How does the possibility that it could replace film projection grab you? DLP projectors have been used to show both conventional and all-digital movies in test screenings in several movie theaters. It's a very real possibility that eventually every theater will have an all-digital system, with movies being delivered by satellite rather than in clumsy film cans.

The technology itself, which was developed by Texas Instruments, seems improbable. As with LCD and plasma displays, the video image is generated by individual pixels, but while the other technologies are limited in their brightness, DLP images are extremely bright. The best DLP projectors are actually brighter than current theatrical movie projectors.

Each pixel on a DLP chip is actually a microscopic mirror that moves in response to the video signal, reflecting the light from an external source through a lens. A projector's brightness seems to be limited only by the strength of the light you can shine on the pixel. Resolution is determined by how small you can make the pixels, and today that's very small indeed.

DLP might replace not only theatrical film projectors but also the cathode-ray tube (CRT) technology that's been central to television for some seven decades, especially in the largest screen sizes.

DVD Player Positioning

Q. The previous owner of my house had a listening room with speaker wires running to the living room. I would like to add a DVD player to my system, but I'm not sure whether I should put it in the listening



The Wizard of "oohs" and "ahhs"

Even the most jaded audio/videophile can't help but utter a few expressions of pure amazement the first time they experience a quality home theater system built around the digital wizardry of Adcom's new GTP-760. Dynamic range, imaging accuracy, special effects localization and dialog clarity are nothing short of extraordinary.

The 760 is a simple-to-operate, digital processing control center for a full range of state-of-the-art, 5.1-channel home theater sources and playback options. It features true, 24-bit processing; DVD audio inputs; four on-board surround sound modes; two stereo modes; an AM/FM stereo tuner; and three built-in delay modes that allow you to custom tailor acoustic environments ranging from an intimate nightclub to an outdoor stadium.

Adcom also offers a full line of home theater power amps to perfectly complement the 760. For more information, visit www.adcom.com; consult your systems designer or, better yet, ask your quality home entertainment dealer for an "ooh"-and-"ahh"-inspiring demonstration!







room and run a 100-foot S-video cable from the player to the TV in the living room, or put the player in the living room and run a fiber-optic cable from there to the A/V receiver in the listening room.

James Cancellari Tampa, FL

A. Neither option is ideal, as cable runs that long can be prey to lots of difficulties. From an operational point of view, however, it would make more sense to have the DVD player in the living room so you can access its special features from its remote. You should probably add a remote extender as well so you can also control the receiver from your viewing position.

Maximum Possible PIPs

• I have a turntable, cassette deck, CD changer, MiniDisc player, computer, DVD player, VCR, cable box, and videogame system that I'd like to hook up to a Dolby Digital receiver. Unfortunately, I can't find one that would allow me to connect all these and still use the picture-in-picture (PIP) capabilities of my TV. Any suggestions?

Dave Finch Shorewood, WI

A. The audio shouldn't be too much of a problem as long as the receiver has a phono input, two tape loops (for cassette and MiniDisc), and a couple of line-level inputs for the CD and computer. If it's shy on line-level audio inputs, you could use the audio portion of an A/V input.

How to connect the video sources to get the most flexible use of your TV's PIP capabilities depends as much on how many A/V inputs your TV has as on how many there are on the receiver you buy. Simply routing all your video devices through the receiver — assuming you can — will give you limited PIP options. The more sources you can connect directly to your TV, the more PIP combinations you can have.

If your TV has three sets of A/V inputs, you could connect two sources directly and the other two through the receiver, which would then drive the third input on the set. That would allow you to switch freely between the two direct signals and whichever was selected on the receiver (which could be changed at will, too). If your TV has a stereo output, you could feed this back to the receiver for the audio from the sources fed directly to the set. And you can also use the A/V inputs on your VCR in addition to its antenna/cable-decoder connection.

Tape Purring

Q. I can often hear a purring noise when I play videotapes. This is especially noticeable with prerecorded tapes and is often accompanied by a pumping sound when words are spoken without music in the background. What am I hearing? Jack Lowe Akron, OH

A. It's a very common phenomenon. In VHS Hi-Fi, the audio is recorded diagonally across the tape along with the video, and at some point the head must move from the end of one track to the beginning of the adjacent one. If the switch isn't seamless, it can cause a small transient, which is the purring sound you describe. This rarely occurs with tapes made on the same machine, and you can sometimes reduce or remove it by tweaking the player's tracking control. You could buy another copy of the tape, but the problem is likely to go away only if the second copy is from a different duplication batch.

Feeding an Older TV

Q. Since my TV has only one input — a coaxial cable jack — how can I hook it up to my DVD player? I've tried a direct connection using an RCA-to-coaxial adapter. I've also tried routing the signal through the VCR. Nothing. Am I going to have to buy a new TV?

Alan Burt Hilo, HI

A. You might. Hooking up the player's line output to your TV's coaxial input doesn't work because you're trying to feed a composite-video signal into an RF input. It's like trying to connect your vacuum cleaner to the kitchen sink. Some VCRs will pass a DVD player's line output without the player's copy-protection signals screwing up the image, but most won't. An external RF modulator like those found in some video stabilizers might work, but using an RF connection will degrade the picture quality of the DVDs you watch.

DVDs and DPL

Q. I like my Dolby Pro Logic (DPL) system and see no need to upgrade to Dolby Digital 5.1, but I'd like to add a DVD player. How would my DPL receiver process the 5.1-channel tracks on a DVD? Would it extract four channels rather than 5.1?

Kin Gee New York, NY

A. Yes. DVD players can mix down the 5.1 channels of a Dolby Digital soundtrack into a matrixed two-channel output. Your

Pro Logic receiver will decode this into three front channels and a mono surround channel (typically fed to two speakers) just as if it were a Dolby Surround original. But the mixdown is done automatically, without the benefit of any human artistic input, so the results can be unpredictable and might have nothing to do with the filmmakers' intent. Nonetheless, I've found that plenty of DVD soundtracks sound just fine in Pro Logic, and quite a few movies on DVD still have only Dolby Surround soundtracks anyway. Note: you might have to enter the DVD player's setup menu to select this processing (check the manual).

Wireless Speakers

Q. I want to install a pair of surround speakers, but there's no easy way to run cables from my processor to the appropriate positions. I'm considering wireless speakers, but I don't like the sound of the ones I've heard. Any suggestions? Edy Missrie Panama City, Panama

A. Don't go the wireless route unless you have absolutely no choice. None of the models we're familiar with can give you the dynamic range necessary for Dolby Digital reproduction. If you have to use wireless speakers, stick with Dolby Pro Logic (DPL) decoding, with its limited bandwidth in the surround channel. But even that would be better than using a virtual surround processor with two speakers, so wireless is worth looking into if you simply can't run any cables at all. Advent has a system that uses a transmitter to send signals to speakers with 15-watt amplifiers. This should do for most DPL playback, and since this system costs less than \$200, you won't be out much if your experiment doesn't work out. However, if there is any way to run wires, do it. Some companies make flat wires that you can run along your baseboards or molding. And if your room is on the first floor, you can drill small holes right at the baseboard and run the wires along the basement ceiling.

If you have a question about audio, video, or home theater, write to Q&A, **Sound & Vision**, 1633 Broadway, New York, NY 10019; e-mail, soundandvision@hfmmag.com. Be sure to include your name, street address, and phone number for verification; only your name, city, and state/country will be printed. Sorry, but only questions chosen for publication can be answered.

"Does real wood sound better than vinyl?"

Matt Polk, Speaker Specialist

t's common sense: A wooden speaker sounds better than a vinyl speaker. Or does it? Actually, a speaker's finish is just that—a thin Layer covering the speaker enclosure. Most speakers are covered in 'wood colored' vinyl. Even so-called 'real wood' speakers usually use thin wood veneers instead of solid hardwood.

Cabinet Construction 101

What's really important to speaker sound is what's underneath the veneer or vinyl finish. Speaker enclosures should be rigid and non-resonant. Solid construction ensures a speaker that doesn't hum, sing or buzz along with your music. (Leave that to your tone-deaf brother-in-law.)

The most common enclosure material is particleboard: pressed and glued wood chips. Typical speakers use 3/4" particleboard; some are even thinner. Better speakers use a material called MDF ("Medium Density Fiberboard"): a denser, less resonant (and costlier) material than particleboard. The enclosures on my speakers have braced 3/4" MDF side walls. I like to make the front panel, or 'baffle,' even thicker—1 inch—to suppress unwanted cabinet resonance where it's most likely to occur; on the driver mounting surface.

The Knuckle Test

How do you tell if a speaker is well built? Retailers frown on customers taking display speakers apart to see what they're made of, so leave your screwdriver at home and use your knuckles. Knock on the side, front and back panels of the speaker. Listen for a non-resonant 'thud,'

(good) or a hollow 'boing.' (Hint: 'boing' is bad.) Pick the speaker up; heavier speakers aren't automatically better, but it improves the odds that the speaker is well made and accurate.

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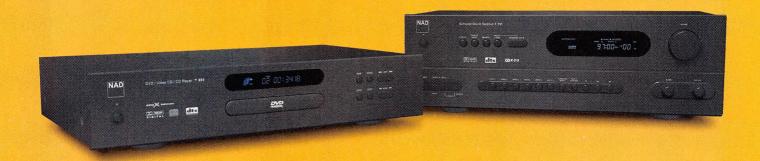
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home theater

DAVID RANADA

Power Testing

nyone in the market for a multichannel amplifier or receiver will have noticed the multitude of ways maximum output power can be rated on manufacturers' printed spec sheets or Web pages. Some higher-end components carry power ratings for all outputs driven simultaneously, while lower-priced equipment is apt to have wattage specs for only one or two channels driven at a time. The confusion increases when you notice that the specs may cite different load impedances (6 or 8 ohms) as well as vastly different distortion levels.

Unfortunately, these variations in rating conditions preclude fair, apples-to-apples

driven test actually amp's maximum output with typical for quite some time multichannel



power comparisons be-A one-channel- tween multichannel receivers and amplifiers based on their pubapproximates an lished specs. Sound & Vision's test reports, on the other hand, have used a standardized set of test conditions that program material. allow direct productto-product power comparisons. Since these conditions differ somewhat from "industry practice" - insofar as there is such a thing in the absence of stan-

dards for multichannel testing - and since I've been asked by both readers and manufacturers to clarify our procedures, following is as full an account as space allows.

• Number of channels. We usually publish three maximum-output-power test results for a multichannel component: 1) for stereo operation with both channels driven simultaneously, 2) for multichannel operation with only the center channel driven, and 3) for multichannel operation with all five main channels driven simultaneously (front left/center/right and surround left/right). All tests are into 8-ohm loads.

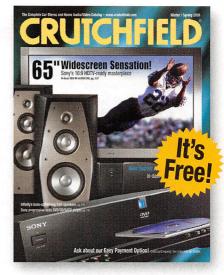
The value of the stereo test is a no-brainer, since most music recordings as well as

radio and TV broadcasts are still in stereo. Some amplifiers will actually give poorer performance if you drive only the front left/right channels in multichannel mode than if you switch to stereo.

It may seem counterintuitive, but our one-channel-driven test actually gives a fair approximation of an amplifier's maximum output capabilities with typical multichannel program material, namely movie soundtracks. That's because a single channel is usually dominant at any instant in a multichannel movie mix (typically the center channel). As long as the other channels are all lower in level by a few decibels, the dominant channel will require most of the wattage by a considerable margin.

Of course, driving only one channel to maximum output will not stress an amplifier as much as those rare, but often dramatically crucial, soundtrack passages when all sonic hell is breaking loose. And loud multichannel music, with its tendency to put sustained tones in all the main channels simultaneously, can even be more stressful than soundtrack action sequences. That's why we also do a five-channelsdriven test, by far the most difficult of our power tests. It's not unusual for a component to do quite well in the stereo and onechannel-driven tests but falter when all channels are driven. This is not necessarily a bad thing if the resulting levels are still high enough to produce adequately loud volume.

• Test frequency. For all our power tests, we use only one test frequency, which is given as 1 kHz but is actually 997 Hz. Aside from greatly simplifying the testing procedure, our rationale for using this frequency is that it would be very unusual for an amplifier to put out less power at lower frequencies. (Why we actually use 997 Hz instead of a round 1 kHz involves subtle mathematical issues outside the scope of this column.) It would also be unrealistically stressful to test components at frequencies much higher than this, since even the most radical music and soundtracks hardly ever demand full power at, say 10 kHz or above. Your ears — and your



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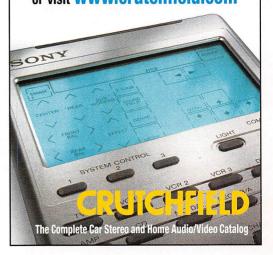
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home theater

speakers — wouldn't be able to handle such high-level high frequencies anyway.

• Output at clipping. The "clipping" point of an amplifier's output is determined by a designated amount of distortion — strictly speaking, total harmonic distortion plus noise (THD+N) — in the signal as the amplifier goes into overload. We choose to designate 0.3% THD+N as the clipping point. As you can see from the graph below of a typical distortion test on an amplifier, overload distortion rises very rapidly. So by choosing different clipping points, one can get different output-at-clipping wattage figures for the same amplifier (the dBW equivalents will usually not change very much, as in the 0.14-dB difference here).

Our clipping point of 0.3% THD+N represents distortion and noise components that are 60 dB below the level of the fundamental test frequency, and are thus unlikely to be audible at typical volume settings since they will be masked by the (very loud) fundamental. For comparison, 1% THD+N might be audible since that represents components only 40 dB below the fundamental, which might not be masked under certain conditions.

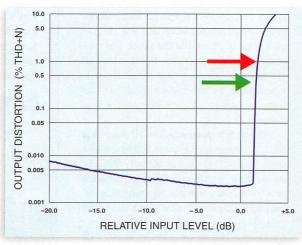
• **Test procedure.** We don't "preheat" the components under test by running them at one-third-power for one hour as required by the Federal Trade Commis-

sion's truth-in-advertising rating rules. That is an unrealistically difficult test condition for audio amplifiers in home use, and meeting it has led to wasteful overdesign throughout the audio industry. Instead, we simply feed in a 997-Hz sine wave that steadily increases in level at 0.5 dB per second while we watch the THD+N reading as it dips down and then rapidly shoots up through 0.3% (see graph).

For the all-channels-driven test, before we apply the rising signal, we carefully balance the channels so that all five are putting out as close to 1 watt into 8 ohms as possible with a low-level signal. We do this because in an all-channels maximum-power

measurement, our equipment can monitor only one or two channels for clipping, and if one channel starts at a higher or lower level than the others, the test will not stress the amp equally in all channels. We also monitor the power-line voltage feeding the amplifier during all power tests, and adjust it if necessary, so that it remains within 1% of 120 volts AC. A change of only 3 or 4 volts can lead to figures that differ by 10 watts or more from those measured with a constant 120 volts. These differences are usually insignificant in dBW terms, but they are misleadingly large in wattage terms, and unfortunately most people pay more attention to watts.

That is our multichannel-power test procedure in a nutshell. It is subject to change pending the results of the FTC's current effort to rewrite its amplifier-rating standards. To help it along, I've submitted our test methods to the FTC in the hope that we'll end up with spec sheets that more realistically represent what the equipment can do at home with real-world signals. I'll be submitting some more radical proposals, too, such as moving the main test frequency down an octave or two (to more closely reflect the demands of music signals) and defining a multichannel test signal that falls between our current onechannel and five-channels tests in difficulty. I'll let you know how these go over. S&V



In testing an amplifier's maximum output power, the choice of clipping point can influence the wattage reading. In this graph, 0.3% distortion (THD+N), **Sound & Vision**'s standard clipping point, occurs at 145 watts (green arrow), while a 1% THD+N clipping point falls at 150 watts (red arrow). The downward slope from the left represents the noise "floor," which decreases as a percentage of the output as the test tone rises.

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All Shook Up

he record labels said it was the devil in disguise, then admitted it had forever changed their business models. I can hardly imagine how many lawyers have built vacation homes in Montana from the fees they've charged litigating for and against it. It drove product planners and marketing people crazy with envy. And now the hardware companies are rushing headlong to cash in on its popularity. We're talking, of course, about MP3.

Most consumer-electronics products are creatures born of corporate parents. Big companies decided, for example, that what the world needed was a smaller disc to hold music, so the compact disc was launched in 1982 amid great fanfare. That's how new products are supposed to appear.

When the Moving Picture Experts Group sat down in 1992 to finalize its international standard, for the "Coding of Moving Pictures and Associated Audio for Digital Storage Media at up to about 1.5 Mbit/s,"

Unlike most worldchanging technologies,
MP3 was a guerrilla
movement all the way.

He possibility of engendering a consumer audio revolution was not on its agenda. In fact, the primary intent was



the possibility of engendering a consumer audio revolution was not on its agenda. In fact, the primary intent was to enable a CD to hold 74 minutes of digital video with accompanying audio. The result was the Video CD, which has enjoyed commercial success only in places like China,

where bootleg Video CDs of chopped-to-fit Hollywood movies are popular.

But that same standard contained seeds that would change audio forever. The committee blessed three different audio formats, with different capabilities, for the standard — they were called Layers I, II, and III. The third layer performed the most



needed was a smaller disc to hold music, so the compact disc was launched in 1982 amid great fan
Below, Ken models RCA's prototype MP3 sunglasses.

Maybe Samsung was saying MP3 is king when it displayed its Yepp line of MP3 players on busts of Elvis at CES.

Below, Ken models RCA's prototype MP3 sunglasses.

aggressive data reduction, compressing the 1.4-megabit-per-second (Mbps) rate of CD audio to 128 kilobits per second (kbps). Even better, the resulting sound rivaled FM radio in quality and at higher bit rates could be indistinguishable from the original CD. That bit of software, soon known as MP3, turned out to be a neat way to reduce the file size of music recordings so they could be sent over the Internet.

Almost overnight — without the help of product planners, marketing gurus, ads, or any corporate push — MP3 became a bona fide phenomenon, rivaling sex in popularity as a keyword for Web search engines. Unlike most world-changing technologies, MP3 was an underground guerrilla movement all the way. It was fueled by kids in their dorm rooms with a lust for anything computerlike, access to fast Internet connections, and never enough money to buy all the music they wanted.

MP3 had arrived, but there was a lag in recognizing it. Mainstream consumerelectronics executives rubbed their eyes they simply could not believe MP3's popularity, thinking it was surely a dorm-room PC fad. When the first portable MP3 flashmemory players arrived from computerperipheral maker Diamond Multimedia, followed by players from what seemed like dozens of small manufacturers in East Asia, the mainstream manufacturers still couldn't believe it. A 64-megabyte (MB) flash card sold for \$150 and held only 68 minutes of MP3-encoded music at a decent-fidelity rate of 128 kbps, yet people were buying both cards and players. It drove the big guys nuts.

But at last they saw the writing on the wall. The legal battles will go on, but today MP3 is a mighty force to be reckoned with. Brushing aside legal qualms, and perhaps professional jealousy, the mainstream hardware manufacturers have wholeheartedly jumped into the MP3 free-for-all — at least if this year's Consumer Electronics

Show is any indication (see "Multimedia Maven," page 112). You can buy MP3 flash-memory players, car and home CD/MP3 disc recorders, players, and changers, CD/MP3 headphone portables and boomboxes, MP3 receivers, DVD/MP3 players, MP3 cell phones, MP3 PDAs, MP3 hard-drive players, and MP3 wristwatches.

Here's a small but telling sign: In the old days, car radios had front-panel jacks for people to plug in portable tape and CD players. The jacks eventually disappeared, but now they're back — so people can plug in portable MP3 players. Another sign: to compete against MP3, Sony has announced a new method of encoding MiniDiscs so they can hold up to 5 hours of music.

Denounced by audiophiles, feared by copyright holders, condemned by lawyers, nuked back to the Stone Age by record labels (in their dreams!), skeptically treated by hardware manufacturers, MP3 is triumphant — because it's what the people want. To everyone who grits his teeth and clenches his fists and resolves to rid the world of MP3 and replace it with a better-sounding, more efficient, and copyright-respecting format, I have only one thing to say: Elvis has already left the building. Say

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Sunfire

test report by Ken C. Pohlmann

Philips

SACD 1000 SACD/DVD-Video Player



pen any newspaper and you'll find stories about Napster, MP3, Internet radio, digital satellite radio, and all kinds of new-economy audio delivery systems. There's no question that these technologies are expanding our audio choices in new and exciting ways. But what's almost lost in the general euphoria is that traditional audio is evolving in equally exciting ways. Everyone knows that MP3 can squeeze decent-sounding music through modems, but how many people know that on the opposite end of the spectrum, Super Audio CD (SACD) and DVD-Audio are dramatically upping the bit rates? Instead of assaulting our ears with irritating artifacts, they're challenging our keenest hearing acuity.

The Philips SACD 1000 certainly shows that the traditional idea of high fidelity hasn't been entirely trampled by dot-com audio. And it's not only one of the few SACD players available but also the first *multichannel* model.

At first glance, the SACD 1000 might be mistaken for an engineering prototype — its front panel is so plain that it almost looks unfinished. Of course, that stark look is intentional and perhaps meant to be elegant. But any sense of elegance is under-

mined by the flimsy plastic disc drawer: my preproduction review sample suffered the indignity of having the drawer's front bezel fall off — disappointing in a player that costs \$2,000.

The player's rear panel has enough connectors to keep you busy for a while. First and foremost are six RCA jacks for the multichannel analog output. Four more RCA jacks provide two sets of traditional stereo analog outputs. In addition, the Dolby Digital, DTS, and PCM digital audio outputs have both coaxial and optical connectors. There are two sets of composite-video jacks and one set each for component- and S-video; the component output is wideband and can feed a progressive-scan signal to a progressive-scan TV.

The remote control is a cut above average and has a distinctly European flair that complements the player's stripped-down front panel. Its long, sculpted silver body holds 48 buttons whose rounded, glossy surfaces make them easy on the eyes and fingers. And the button layout shows good ergonomic design — everything is cleanly labeled with text, icons, or both. In addition to the usual controls, it has buttons for a three-level pannable picture zoom, shuffle play, 10-second intro scan, sound mode,

four-speed forward and backward slow motion, three-speed forward and backward fast search, and display brightness.

Installation of this SACD player was essentially the same as for a DVD-Video player with a built-in Dolby Digital decoder. Of course, installation wasn't complete until I worked through the player's onscreen setup menus, which were fairly straightforward but used more icons than I'm used to seeing. Among the limited setup options (the SACD 1000 lacks the many video adjustments available on some DVD players), you can select NTSC black-level shift (on/off) and Dolby Digital Night

fast facts

KEY FEATURES

- Multichannel and stereo SACD playback
- DVD-Video playback
- Built-in Dolby Digital decoder
- Progressive-scan component-video output

DIMENSIONS 171/8 inches wide, 43/4

inches high, 13 inches deep

WEIGHT 22 pounds

PRICE \$1,999

MANUFACTURER Philips Electronics,

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test report

Mode dynamic-range compression. I also configured the speaker output for DVD-Video playback. For the front left/right channels, you can choose "large" or "small" speakers; for the center and surround channels, you can choose "large," "small," or no speakers as well as vary the level (±6 dB) and add up to 5 milliseconds of delay. You can vary the subwoofer output's PHILIPS level or turn it off. These controls affect only DVD-Video playback. As my col-

league David Ranada has pointed out, a multichannel SACD or DVD-Audio player should provide this kind of bass management for music playback also, but — like the DVD-Audio players we've tested — the Philips does not. Hence, for the best music performance, you should use full-range speakers for all five main channels.

To check out the player's DVD chops, I watched Pitch Black, a decent space-monster flick. The saga begins with an impressive crash landing on an alien planet. The ship hurtles through fiery plasma and breaks into pieces as people die a screaming death (kind of like that time at the mall when I accidentally tromped on the accelerator instead of the brake). The player's MPEG decoder vividly reproduced the brilliant oranges and reds and had no problem with the rapid MTV-style cuts, crisply conveying each new frame without tiling artifacts. The Dolby Digital decoder kept me in the middle of the crash — meteorites whizzed past my head and hit the wall behind me, alarm sirens sounded all around, and the low rumbling roar of fiery destruction engulfed me. This action sequence demonstrates what surround sound is all about, and the SACD 1000 was up to it.

The planet-surface scenes have a washedout look, with harshly yellow and blue hues. But don't adjust your TV: the look is intentional (the desert planet is baked by three suns). The player faithfully reproduced this ugly but effective picture without any unwanted contrast problems. A point-of-view shot through a criminal's disfigured eyes showed brilliantly glowing polarized auras — this unusual photographic trick is probably something that the player's designers, or MPEG's inventors, never envisioned, but the SACD 1000 conveyed it without problems.

Later in the film, all the suns set (accompanied by some of the most dramatic sundown music you'll ever hear), the planet becomes . . . well, pitch black, and the monsters come out to play. The critters swarm through the sky like clouds of bats, squealing far and near and all around. Subsequently, individual creatures dive bomb their victims, swooping through the sound field. This is another great example of the effectiveness of surround sound, and the player's decoder didn't miss a beat.

Once darkness descends, the entire film becomes a dark haunted-house story and the picture is a study of shadows. Black, of course, is always hard to reproduce cleanly, but the player seemed unstressed. My favorite MPEG test — flashlight beams shining through haze (or gun smoke) — looked totally realistic. DVD may be a competing technology, but when Philips designed its flagship SACD player, it didn't skimp on DVD-Video playback.

Of course, the real reason you would buy the SACD 1000 is to play multichannel SACDs. To audition that feature, I turned to Mike Oldfield's classic Virgin album, Tubular Bells (see review on page 125), reportedly the first multichannel SACD to be produced by a major label from an original multitrack master. The album was released in 1973 as a stereo LP, but a four-track (quadraphonic) mix was prepared in 1975 from the original 16-track studio master. For this SACD release, that four-track mix was transferred to DSD as four channels (though SACD supports six), closely matching the quad version but now revealing all its uncompressed glory.

The album begins with the famous *Exorcist* theme in the front channels, played on piano and high-pitched bells. Another piano line enters the right surround channel, and yet another occasionally sounds in the left surround. The mix is slowly elaborated with more instruments, and soon the



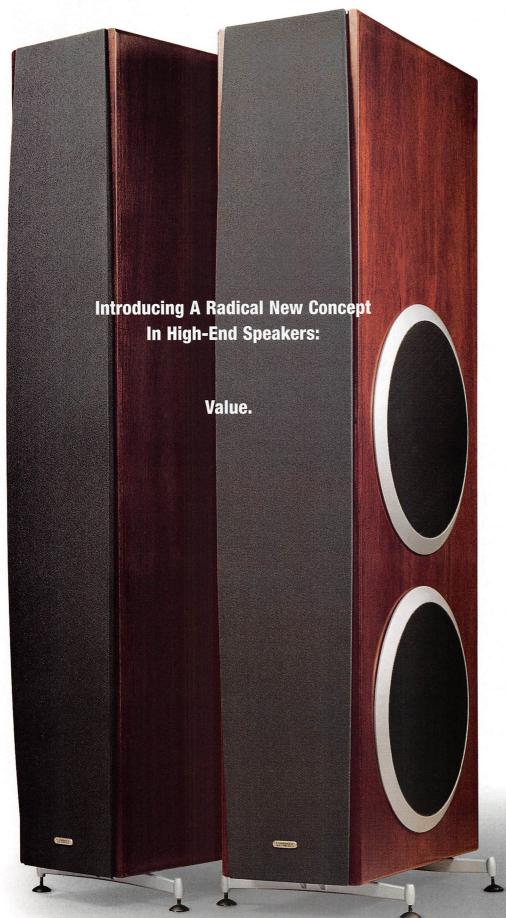
The SACD 1000 showed its DVD-Video chops with the sci-fi flick *Pitch Black*, conveying both the look of the alien planet and the surround sound effects in the action scenes with equal aplomb.

listener is enveloped by the rich soundscape. Surround sound greatly benefits a piece like this, because it can add space to the thick orchestration, and the surround imaging isn't constrained by the traditional stage placement for a symphony orchestra or rock band. I switched between the stereo and four-channel mix (both are included on the disc) and quickly concluded that this release is an excellent example of how far surround sound can surpass stereo.

Moreover, the SACD 1000 reproduced this two-part composition (corresponding to sides A and B of the LP) with great fidelity. Admittedly, the recording technology of 30 years ago was not particularly good by today's standards - some distortion and clipping are clearly audible in places, as is a fair amount of analog tape hiss — but that's not the player's fault. Indeed, it is a tribute to the player that it accurately conveyed the original recording, warts and all. I would be greatly surprised if anyone could reliably differentiate between the sound of the quad master tape and the sound on the new disc as played by the SACD 1000.

I was, however, disappointed that the remastering didn't take full advantage of the SACD format. Clearly, the bass line should have been mixed to the LFE output, and the center channel should have been used, too. For example, Viv Stanshall's tour-





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test report

HIGH POINTS

SACD and CD fidelity to die for.

Excellent video quality.

Sleek Euro-style remote.

CD-R/RW playback.

LOW POINTS

Incomplete bass management.
Sluggish transport.
Limited setup options.
Flimsy plastic disc drawer.

guide comments during the "Sailor's Hornpipe" section could have been placed in the center channel instead of all four channels. But in the end, these are aesthetic judgments (and in this case, the producers decided simply to reproduce the original quad mix). Incidentally, stereo playback from the CD layer on this disc, as well as from conventional CDs, sounded absolutely excellent. Not surprisingly, SACD players can make terrific CD players, too.

To check out the player's other two channels, I turned to the Guano Apes' Don't Give Me Names (Supersonic/G.U.N./ BMG). This punk rock group isn't my favorite band, but at least the album is a true 5.1-channel mix. All six channels get a thorough workout, with drums and lead vocals in front, backup vocals and blazing guitars in back, and squealing synthesizers swooping down from all around. The subwoofer channel gives real grunt to the kick drum and bass guitar, and the center channel has bone-dry, in-your-face vocals. Most important, the mix shifts dynamically as fast as the music, with surround panning creating a real sense of frenzy that befits this very energetic music. Actually, this surround mix is so darn good that I ended up kind of liking the Guano Apes — a real tribute to 5.1-channel technology!

The SACD 1000 handled the barely controlled mayhem with aplomb. The playback was utterly transparent, and I couldn't detect any artifacts or added distortion from the Direct Stream Digital (DSD) decoding. If you've ever worried whether the CD format was standing between you and the music, you can set such fears aside when you listen to SACDs on this player.

I did have a few quibbles — all centered on the transport mechanism. When I was playing a DVD movie and hit the track/ chapter skip button, it took a full second to switch to the next chapter. This is too slow.

The fast-forward response was frustratingly sluggish with both CDs and SACDs, too.

The bottom-line question, of course, is whether you should buy an SACD or a DVD-Audio player. The answer probably can't be decided in terms of sound quality. Because authoring signal paths differ between SACD and DVD-Audio, it will be difficult to conduct a controlled A/B listening test, but I suspect that audible differences are virtually nonexistent anyway. The choice will ultimately be determined by the software catalogs available in each format. The catalog that grows the fastest, and has the best titles, will prevail, with the other format occupying a smaller niche. So which should you buy? Since there were only about half a dozen multichannel SACDs and fewer than 40 DVD-Audio discs at press time, it's too soon to tell.

Frankly, the SACD camp missed a huge opportunity in waiting this long to launch multichannel players. If the SACD 1000 had come sooner, while DVD-Audio was delayed (and then delayed again), it would



The SACD 1000 brought the excellent four-channel mix on the SACD of Mike Oldfield's classic *Tubular Bells* streaming into the 21st century.

have made a bigger impression. Still, late is better than never, and the SACD 1000 demonstrates just how impressive multichannel SACD can be. The hype was huge, but the actuality lives up to it. The Philips SACD 1000 proves that traditional high fidelity is alive and well, having moved far beyond what was possible only a few years ago. Like DVD-Audio, multichannel Super Audio CD is a worthy successor to the CD. Now, bring on the discs!

in the lab

DVD-VIDEO PERFORMANCE

Measurements were made from a variety of DVD test discs, all through the player's composite-video output except as noted and using the player's default picture settings.

Maximum white-level error	+3 IRE
Setup level (not variable)	+7.5 IRE
Differential gain	8%
Differential phase	9°
Horizontal luminance frequency res	sponse

Horizontal luminance frequency response (re level at 1 MHz)

aı	4 IVITIZ	1.1	uD
at	5 MHz1	.9	dB
at	6 MHz—3	3.1	dB
at	6.75 MHz (DVD limit)3	3.3	dB

Onscreen resolution	540 lines
Pixel croppingleft 9. right 1. top 0	bottom 2

		,	,		
In-player	letterboxing			good	

Component-output level error (Y/P_r/P_b).....+10.6/+4.0/+4.4%

Component-output timing error (P_r/P_b)+1/+2 nanoseconds

MULTICHANNEL SACD PERFORMANCE

All measurements were made from the Philips SACD test disc. Results were typical for all channels.

Maximum output lev	el2.02 volts
--------------------	--------------

Frequency response (20 Hz to 20 kHz) 40-kHz filter....+0, -0.52 dB (-3 dB at 42.3 kHz) 50-kHz filter....+0, -0.22 dB (-3 dB at 52.2 kHz)

Noise level (re -20 dBFS, digi	tal-silence
signal)	93.9 dB
Distortion (THD+N, 1 kHz)	
at 0 dBFS	0.0024%
at -20 dBFS	0.012%

For this report I was able for the first time to use a Philips test disc carrying multichannel SACD signals. Since its test tones don't fully match our CD-test procedures, several of our usual measurements could not be made. Those I did make were outstanding. The superb noise and distortion results may, in fact, be too high - our standard test procedures had to be jettisoned in order to get any readings on our test equipment at all. Also, the relatively high-level, but still inaudible, ultrasonic quantization noise produced by the SACD system's DSD 1-bit digital encoding system undoubtedly leaked into these measurements. Don't worry — the player's inherent noise and distortion are inaudible. CD performance was also superb, providing essentially "perfect" performance with standard 16-bit programs and near-perfect results with quasi-20-bit CDs.

In the DVD performance tests, the SACD 1000 proved to be one of the few players that does a good job of letterboxing widescreen movies for display on a 4:3 screen. Other video performance was fine, as was the Dolby Digital (DD) decoding aside from the somewhat low subwoofer-output overload point (a common result). If you use an external DD decoder, that won't be an issue.

— David Ranada



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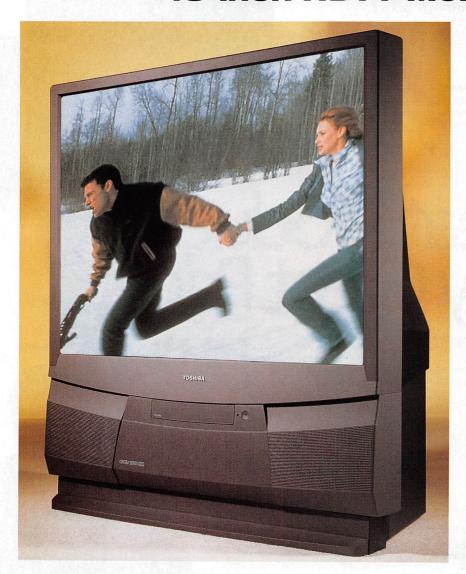




test report by al griffin

Toshiba

43-inch HDTV Monitor



ver the past year I've had plenty of reasons to wring my hands and curse the sky for want of high-def programs to watch, but I can't say that I've been lacking in options when it comes to HDTV sets. Two years ago, an early HDTV adopter had no choice but to cart home an enormous rearprojection TV (RPTV). But the field has exploded in the past year, with both widescreen direct-view and cool, compact rearprojection HDTV sets cropping up like mushrooms in stores.

Toshiba's 43HX70, a rear-projection HDTV monitor with a 43-inch (diagonal) 4:3 aspect ratio screen, belongs to the latter camp. Eye-pleasing and compact at only 18 inches deep, the 43HX70 can easily be be placed on a low table or TV stand — a perfect fit for those who don't want a living room dwarfed by a big beast of a TV. Best of all, the 43HX70 lists for only \$2,800, which is a reasonable price for a big-screen HDTV monitor. To watch high-definition programs from DirecTV or local digital broadcasters, you'll need an ex-

ternal HDTV tuner like Toshiba's new DST3000, which lists for \$999.

The 43HX70 scores high on the connectology scale. It features two antenna inputs, three A/V inputs with both composite- and S-video connections (one input resides on the set's front panel behind a flip-up cover), and two wideband component-video inputs that accept 480i-, 480p-, and 1080i-format signals. Other jacks include an A/V output with composite video, a variable-level audio output, and a center-channel audio input so you can use the TV's own speakers for the center channel in a surround sound system (as usual, an option I don't recommend).

Toshiba provides an excellent remote control with a fully backlit keypad. Too few TV remotes include this feature, which lets you operate the set in low- or no-light conditions. The Toshiba remote can be programmed to control up to five additional components — including a DVD player, a VCR, and a cable box/satellite receiver — and features a number of multipurpose buttons for operating other gear.

Like other HDTV monitors with squarish 4:3 screens, the Toshiba lets you watch widescreen high-def material without sacrificing resolution. Select the 1080i Picture mode, and the set compresses its raster to a 16:9 area, with black bars at top and bottom. Unfortunately, this feature isn't available for signals with different scan

fast facts

KEV EEATLIBES

- 43-inch (diagonal) 4:3 aspect ratio screen
- Two sets of wideband component-video inputs
- Displays 480p SDTV and 1080i HDTV signals
- Built-in line-doubler with 3:2 pulldown for standard video signals
- 9-point user convergence control

DIMENSIONS 37³/₄ inches wide, 37¹/₂ inches high, 18¹/₂ inches deep

WEIGHT 133 pounds
PRICE \$2.800

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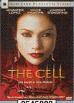




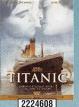
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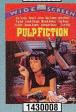








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test report

HIGH POINTS

Slim, space-saving design. Excellent remote control with backlit keypad. Reasonable price.

LOW POINTS

No 16:9 display mode for anamorphic DVDs. Hot-spotting at off-axis viewing positions.



rates, like the output of DVD players. As a result, letterboxing for anamorphic DVDs has to be done in the player — a process that usually introduces image artifacts. Standard NTSC signals from a VCR or DVD player are upconverted to 480p (progressive-scan) by the set's built-in scan converter, which performs "3:2 pulldown" to eliminate the distracting jaggies that result when 24-frames-persecond film is transferred to 30-fps video.

As always, my first step was to adjust the TV for the

best possible picture quality. I called up the Preference menu, tweaked the picture settings using Ovation Software's *Avia* test DVD, and aligned the set's red, green, and blue CRTs using its convergence menu. Convergence controls are limited to nine adjustment points, which are enough to dial in only a rough align-



ment. A visit to the set's service menu allowed me to make finer adjustments (this procedure is best left to a qualified technician). The set's 1080i Picture mode requires separate convergence settings, so if you connect an HDTV tuner, you'll need to revisit the convergence menu to touch up the adjustments while feeding it a high-def signal.

The 43HX70 offers a feature that videophiles will really appreciate: you can store preferred picture settings for each of its video inputs. This is useful when you have several different source components since it allows you to compensate for differences in their output levels. For example, the progressive-scan DVD player I hooked up required brightness and contrast settings different from those my satellite receiver needed.

Like virtually all RPTVs, the set has a protective shield on the front to keep its screen out of harm's way. The shield is designed to minimize reflections, however, so you won't have to worry too much about room lights and undraped windows when you're watching TV. A more troublesome issue is hot-spotting. Watching from a position 30° or more off the set's central axis, I noted color shifts and a substantial drop in brightness at the screen's edges. This won't be a problem for solo TV watching, but if you've pulled extra chairs into your room to accommodate guests, they may find reason to complain if they're seated too far to one side.

The 43HX70's Warm color-temperature setting measured far enough off the 6,500-K NTSC standard that I had to adjust its gray scale from the service menu. Watching a DVD of the movie *Reindeer Games* after making adjustments, I found the set's color rendition greatly improved. For example, in a scene where Ben Affleck passes a Salvation Army Santa in a snow-filled lot, the Santa suit looked the right hue of red while the snow banks in the lot beyond had the creamy tone that snow takes on when it's hit by late-afternoon sun.

I was also impressed by the set's ability to pull out a range of detail in shadowy images. In *Reindeer Games*' opening scenes, Affleck mopes around in a dark prison environment. The set delivered solid black levels throughout these gloomy sequences, and when the character is finally sprung from jail into the light of day, blacks maintained their depth even with the sudden overall change in image contrast.

HDTV programs looked good on the 43HX70 - good enough to make me endure a whole half-hour of a lame David Spade vehicle, Lost and Found, that was showing on HBO's high-def channel. I could make out textures like the stucco surface of an apartment building and the fine woodgrain finish of a cello played by Spade's love interest. But even though the 43HX70's high-def performance was engaging enough to suck me into a bad movie, its picture detail was still a notch below that of larger widescreen RPTVs and even a few smaller widescreen direct-view sets I've reviewed. But you have to expect some tradeoff in high-def detail with sets that have a relatively small 4:3 screen.

With the 43HX70, Toshiba has delivered a neat solution for viewers who want to expand their viewing options to include HDTV, but don't have the floor space for a mammoth rear-projection set. And its reasonable price makes it a great option if you want your next TV to be HD-ready but want to keep the cost below three grand. I would like the 43HX70 even more if its 1080i Picture function also handled 16:9 format anamorphic DVD images, but even without that desirable feature, this set strikes me as a solid TV for the money. S&W

in the lab

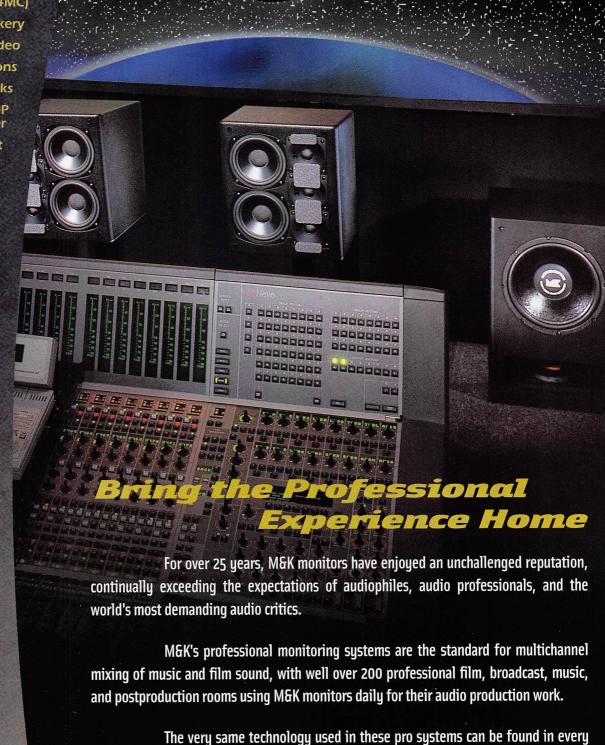
COLOR TEMPERATURE

(Warm setting, before/after calibration)
Low window.......10,2889/6,557 K
High window......NA/6,473 K

BRIGHTNESS (Warm setting, before/after calibration)......45.2/38.0 ftL

Precalibration measurements were made after initial adjustments with the Avia test DVD. The set provides three color-temperature options: Cool, Normal, and Warm. Prior to calibration, the Warm preset measured far enough off the 6,500-K NTSC standard that I'd recommend paying a professional to perform gray-scale calibration. Contact the Imaging Science Foundation to locate a certified technician in your area (561-997-9073, www.imagingscience.com). After calibration, gray-scale tracking was excellent, ranging ±100 K at each 10-IRE step between 20 and 100 IRE. The performance of the set's 3-D digital comb filter was also excellent, delivering clean transitions in an SMPTE colorbars pattern fed through the composite-video input. NTSC decoding was accurate. Geometry and focus were also very good except for the blue CRT, which looked slightly defocused compared with the set's red and green CRTs - a common problem with RPTVs.

20th Century Fox 4 Media Company (4MC) The Bakery Casablanca Film & Video **Chace Productions** Chicago Audio Works Cinram/POP **DVD Center Complete Post** Digimix Digital Sound and Vision DTS **Dolby Labs** NY, LA, SF DreamWorks SKG **Electric Switch Enterprise DVD** and Post **FotoKem Film** and Video **Gateway Mastering HBO** Productions **HD** Vision Hit Factory **JAK Productions Laser Pacific** Lucasfilm LTD **Monterey Post** Motorola DSP NARAS **Paramount Studios** Saban Entertainment Seventeen Grand Skywalker Sound Sony Music **Sony Pictures Universal Studios**



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test report by Daniel Kumin

KEF

KHT2005 Home Theater Speaker System



ver the years I've encountered speakers shaped like cubes or rectangular solids, pyramids, truncated cones, trapezoids, cylinders, and spheres — even one shaped like a human ear (no kidding). But KEF's new KHT2005 home theater system features the first egg-shaped speakers I can recall.

KEF is a British manufacturer. The acronym actually denotes Kent Engineering Foundry, the original firm that somehow morphed into a leading speaker maker whose designs have been familiar to audiophiles worldwide for years. Though KEF hasn't yet won similar recognition in the

home theater sphere, its new KHT2005 system might change that. The arresting design combines five identical HTS2001 satellite speakers with a compact powered subwoofer, the PSW2000, for the list price of \$1,750.

The subwoofer has an unconventional inset glass top and is more than conventionally well equipped. It has two pairs of nicely finished, all-metal binding posts for speaker-level connections flanking pairs of RCA jacks for line-level input and output. Smooth-operating, continuously adjustable knobs control level, crossover frequency, and phase. The line-level outputs are high-pass filtered but attenuated only 14 dB.

The sub's speaker-level outputs are not filtered.

Of course, the key story here is the nifty-looking satellites. The cast-aluminum HTS2001 is shaped like an egg with about a third of its width sliced off. The baffle is not quite flat, curving back slightly at top, bottom, and both sides. This tiny enclosure — very nicely finished in a sort of mattesatin metallic gray — is vented via a single port on the front, just below what at first appears to be a single 4-inch driver.

But despite its appearance, the HTS2001 is a two-way system, using KEF's proprietary Uni-Q driver array, which puts the tweeter at the apex of the woofer cone to create a "coincident sound source," one where both bass and treble sounds originate from the same point in space. The advantages are said to include smooth, predictable coverage of both treble and midrange, both horizontally and vertically, and superior imaging thanks to a fully "coherent wavefront."

The Uni-Q layout also delivers impressive space savings: each satellite's dimensions are barely 5 x 8 x 6 inches, including the supplied multipurpose stand. The stand permits the "egg" to swivel about 30° in either direction on an integral ball-and-swivel, and it holds the speaker upright on a tabletop or shelf. A single Allen screw lets

fast facts

DRIVER COMPLEMENT

HTS2001 satellite, 4-inch cone woofer, ½-inch dome tweeter

PSW2000 subwoofer, 8-inch cone

POWER subwoofer, 150 watts ENCLOSURES all vented DIMENSIONS (WxHxD)

satellite, 5 x 7³/₄ x 6 inches **subwoofer**, 12¹/₂ x 14¹/₄ x 12¹/₂ inches

WEIGHT satellite, 4½ pounds;

subwoofer, 31¼ pounds
FINISH satellite, matte aluminum;

subwoofer, black vinyl and glass
PRICE (complete system): \$1,750

MANUFACTURER KEF America, distributed by Adcom, Dept. S&V, 10 Timber Lane, Marlboro, NJ 07746; phone, 732-683-

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Home Theater Magazine November 1998

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test report

you reorient the stand for horizontal placement, as for a TVtop center speaker (one satellite comes out of the box that way). You can also wall-mount the speaker via keyhole slots in the bottom of the stand there's even a clip-and-save mounting template bound into the manual. All in all, this is a well-designed, flexible sub/sat system.

I connected the KEF speakers to a high-performance A/V receiver delivering 150 watts per main channel, which I deployed with some care, since the manual rates the small satellites' "amplifier requirement" as 10 to 100 watts. I positioned the front left/right satellites on stands, while the center speaker went atop my 30-inch Princeton Graphics widescreen TV and

the surround speakers on my usual high shelves at the room's sides, slightly behind the listening position.

In stereo music listening the front L/R satellites and subwoofer sounded warm yet clear. Imaging was excellent - deep, solid, and palpably defined. These qualities were most apparent with well-produced recordings made using simple microphone setups, such as the jazz-trio CD Fictionary from pianist Lyle Mays, drummer Jack De-Johnette, and bassist Marc Johnson (Geffen). The KEF array yielded seductively intimate sound with a natural, "floating" sense of instrumental location and a very pleasing sense of depth.

The KEF combo's warmth did, however,





The KEF speaker system passed our usual battery of cinema-sound tests with flying colors. though its small subwoofer couldn't reproduce the doomed ship's deep-bass rumbling and trembling in The Perfect Storm.

limit my overall impression of space and "air." It also made music sound a bit distant at times. But these are minor quibbles in the grand scheme of things.

The system did an excellent job with DVD movies. Dialogue was stable and intelligible, and thanks to KEF's Uni-O design, it was virtually free of the changes in tonality that off-axis listeners hear from typical dual-woofer horizontal center speakers. Coherence of the front-stage image was impressive. For example, the innumerable waves crashing across the decks of the Andrea Gail in The Perfect Storm all moved smoothly and convincingly from one side through the center to the other with very little change in timbre, apparent height, or intensity. The surround-channel reproduction, while not quite as spacious or "invisible" as from my reference dipoletype surrounds, was still very good.

The PSW2000 subwoofer proved generally capable but, like many small subwoofers, had limited bass extension (see "in the lab," page 62). As a result, the Fictionary CD had noticeably less foundation than I get from my (considerably more expensive) reference speakers, which roll off gradually below about 40 Hz even without the subwoofer. The same was true of pop music. Used with the HTS2001 satellites in my studio, the sub tended to emphasize the mid- and upper-bass regions, causing most pop music to sound bassier than on my reference setup. With movies this char-

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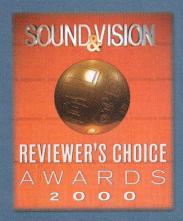


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test report

HIGH POINTS

Striking modern, ultracompact design. **Excellent imaging in** both stereo and surround. **Excellent off-axis** center-channel sound. Flexible satellite mounting system.

LOW POINTS

Treble and upper midrange can be somewhat distant. Limited deep bass.

acteristic occasionally translated into a little midbass boominess and a shortage of the kind of gut-thumping deep bass that the climactic scenes of The Perfect Storm depend on - lots of deep rumbling and trembling as the inevitable disaster comes ever closer.

As always, I experimented with different hookups and settings to get the best possible results, but I heard little difference

between using the sub's line-level inputs with my receiver's 80-Hz crossover and using its speaker-level inputs and onboard crossover. In fact, the sub's crossover control didn't seem to have much effect, something I later confirmed on the test bench. Consequently, I couldn't "cheat" the sub's crossover frequency downward to smooth out the midbass.

Otherwise, the KEF system passed my cinema-sound tests with flying colors. The system played relatively loud without evident distortion or complaint - plenty loud for family-style home theater.

In its price class, the KEF KHT2005 has many competitors, including several systems whose 10-inch subwoofers boast deeper bass performance and a few that (at least in my book) have audibly better tonal balance and range. But there's no denying that this speaker array will hold strong appeal for lots of folks thanks to its unique looks, excellent finish quality, space-saving design, dramatic imaging, and smooth sound. It's well worth an audition.

in the lab

FREQUENCY RESPONSE (at 2 meters) front left/right......100 Hz to 19.7 kHz ±4.6 dB center......100 Hz to 20 kHz ±4.1 dB surround.......100 Hz to 19.3 kHz ±4.5 dB subwoofer......45 Hz to 125 Hz ±2.4 dB SENSITIVITY (SPL at 1 meter with 2.8 volts of pink-noise input)

IMPEDANCE (minimum/nominal)

BASS LIMITS (lowest frequency and maximum SPL with limit of 10% distortion at 2 meters in a large room)

satellites62 Hz at 75 dB SPL32 Hz at 82 dB SPL

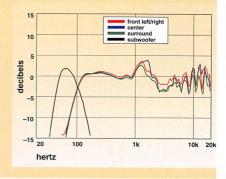
95 dB average SPL from 32 to 62 Hz 106.4 dB maximum SPL at 62 Hz

All of the response curves in the graph are weighted to reflect how sound arrives at a listener's ears with normal speaker placement. Because the HTS2000 is used for all five main channels and has unusually consistent vertical and horizontal directionality thanks to the coincident woofer/tweeter speaker topology, the small differences in the response figures and curves primarily reflect the different weightings.

The basic response shape includes a peak not quite an octave wide at 1.5 kHz and an octave-wide dip between 2 and 4 kHz followed by several cyclic peaks/dips, which were apparently caused by sound from the centrally mounted tweeter reflecting off the woofer cone. The wider measuring angles used for the surround speaker revealed slightly limited highfrequency response, while the mid-band anomalies were somewhat worse in the center channel. In any case, all listeners will get the same tonal balance no matter where they sit.

Bass limits for the PSW2000 subwoofer were measured with it set to maximum bandwidth and placed in the optimal corner of a 7,500-cubic foot room. In a smaller room users can often expect 2 to 3 Hz deeper extension and up to 3 dB higher sound-pressure level (SPL) from the subwoofer. It produced a maximum of 106 dB SPL at 62 Hz and above, but response fell quickly below that frequency. The crossover turnover frequency closely matched the dial setting at the uppermost (120-Hz) setting. Below that point, however, there was very little change in actual frequency as I turned the dial toward the lowest setting (80 Hz). Instead, the crossover slope increased from 18 dB per octave to about 20 dB when the dial was set to the bottom of its rotation.

- Tom Nousaine



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performance delivered by these speakers. Power handling, accuracy, detail, and imaging were all examplary."
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JVC

XV-D723GD DVD-Audio/Video Player



rom a distance, JVC's XV-D723GD looks like a million bucks. Its gold-colored front panel is a welcome relief from basic black, and its lines are crisp and clean. Close examination, however, shows that the panel is plastic, and the 8½-pound player has hardly any heft — not that there's anything wrong with that, but it undermines the high-end aura suggested by the styling.

The player's controls are fairly conventional, with buttons for the basic transport functions and — an audiophile touch one to turn off the display. The blue fluorescent dot-matrix display is also conventional, except that a small blue bar lights up when a DVD-Audio disc is playing and one of three LEDs lights to show its sampling frequency — 44.1/48, 88.2/96, or 176.4/192 kHz. I particularly liked the latter indicator because it lets you point out to friends when your player is reading data at a rate quadruple that of their lowly CD players. In addition, icons show which surround channels are playing — also nice to know since DVD-Audio discs can have anything from two to six channels.

Another useful set of indicators shows the audio format being played — LPCM (linear PCM), Dolby Digital, DTS, and so on — and also whether Meridian Lossless Packing is in use. (MLP is a "lossless" data-compression scheme used to increase the storage capacity of DVD-Audio discs.) Even better, "Bonus" appears in the display whenever a DVD-Audio disc contains bonus tracks and "B.S.P." whenever one contains browsable still pictures. A rubber seal around the disc drawer keeps dust and dirt out of the transport mechanism.

The player's rear panel offers all the connectors you'll likely ever need, starting with six output jacks for analog audio signals from the player's Dolby Digital and DTS decoders as well as from DVD-Audio discs. As with all other DVD players, there are no digital outputs for DVD-Audio signals with sampling rates above the DVDstandard 48 kHz. But you'll find optical and coaxial digital audio outputs for CDs and DVD-Video discs, in case you want to let your receiver handle the decoding, as well as composite-, component-, and Svideo outputs. A slide switch selects either progressive-scan or interlaced format for the component output, and a pair of CompuLink jacks lets you connect the XV-D723GD with other JVC products for integrated operation.

The remote's tan color is also a relief

from black, and it features a handy springloaded shuttle wheel for forward and reverse scanning. Unfortunately, the rest of the densely crowded controls are all buttons of essentially the same size. Would it have killed the designers to have paid some attention to ergonomics?

The XV-D723GD packs plenty of perks, including 3D Phonic virtual surround processing — with Action, Drama, and Theater modes, each with five levels — for playing Dolby Digital discs over just two speakers; a Digest feature that simultaneously displays the beginnings of nine chapters; a

fast facts

KEY FEATURES

- Dolby Digital, DTS, and DVD-Audio decoding
- Progressive-scan component-video output
- Extensive setup menu
- Adjustable virtual surround sound
- 13-step picture zoom

DIMENSIONS 17½ inches wide, 4½

inches high, 131/4 inches deep **WEIGHT** 81/4 pounds

PRICE \$799

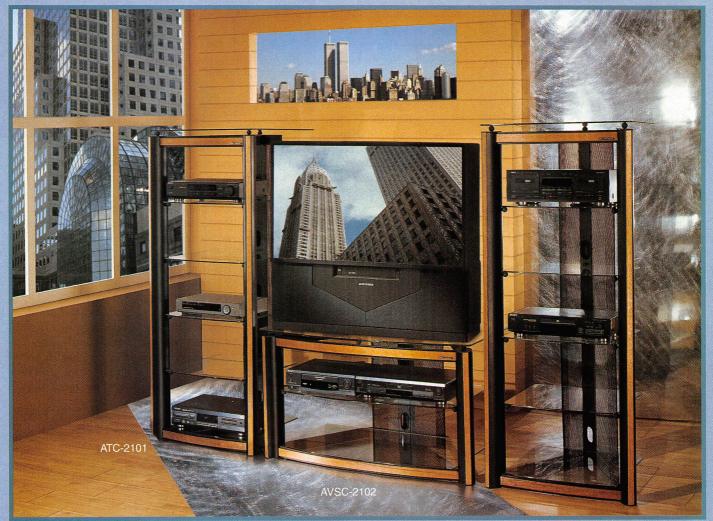
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HOME THEATER FURNITURE





The WU-2100 Home Theater System is undoubtedly one of the most exciting pieces recently introduced by Bell'O, elegantly combining metal and glass with a real wood trim -- another fine addition from the deCarolis Collection.

The strikingly beautiful audio tower (ATC-2101) is designed to accommodate at least ten audio/video components. The rounded glass shelves, which provide a truly custom look, immediately catch the eye. Measuring 25"w x 60"h x 24"d the ATC-2101 is truly a worthwhile addition to your home theater.

Creatively designed as a companion piece for the ATC-2101 or to stand alone, the AVSC-2102 is an excellent choice for up to a 40" Direct View TV and at least four components. Dimensions are 43"w x 23"h x 23"d.

The AVSC-2103, also a companion piece to the ATC-2101, accommodates up to a 40" Direct View TV and at least six components. Dimensions are 43"w x 30"h x 23"d.



test report

HIGH POINTS

Excellent progressive-scan video.
Comprehensive front-panel display.
Affordable price.

LOW POINTS

Incomplete bass management.

Lackluster remote-control design.

No CD-R playback.

Strobe feature that displays nine stop-action thumbnail still images as the movie plays (hitting the pause button gets you to the next nine thumbnails); picture zoom with 13 levels (as low as 1/8 and as high as 1,024x); and dynamic-range compression for Dolby Digital soundtracks.

You can also tweak the picture's brightness, contrast, sharpness, gamma, tint, col-

or, and luminance delay, then store different settings under the User 1 and User 2 picture modes; the Normal and Cinema modes provide different factory picture settings.

It was an easy matter to connect the player's optical digital output and six analog audio outputs to my Denon receiver and its component-video output (switched to progressive-scan) to my Princeton Graphics monitor. Besides the usual onscreen video setup chores, such as selecting a 16:9 aspect ratio, I had to choose

among the player's Auto, Video 1, Video 2, Film, and Smart progressive-scan modes, which are mainly used to optimize the player depending on whether a disc is derived from film or video. I chose the Auto mode, which automatically selects the best output. JVC warns that some DVDs won't play correctly in Auto mode, but I had no problems with any I tried.

Like other DVD-Audio players, this one also requires some special audio setup steps. Fortunately, the menu's excellent onscreen graphics help lighten the chores. I first checked out the Downmix menu, which controls how the player takes from three to six channels on DVD-Video or DVD-Audio discs and "folds" them down

into two-channel stereo. Three settings are available. A speaker-setup menu allows you to pick the configuration that best suits your system — two-channel, standard 5.1-channel, or a custom settings tap into an Expert menu, which lets you select "small" or "large" for the front left/right speakers and none, "small," or "large" for

the center and surround speakers. A subordinate Bass Redirect menu lets you boost the levels of the LFE (low-frequency effects) and front left/right channels (if they are set to "large") if you have small surround speakers with limited bass response.

A DTS bass-management menu lets you select a full-range output to all channels, ignoring the other speaker-setup menu, or have the player follow the "small"/"large" settings of the speaker-selection menu and boost the LFE output. The bass-management options are detailed using a lot of fine print (literally) in the owner's manual various features affect various outputs differently depending on how other features are set and what kind of disc is playing. The bottom line, however, is that, like the other DVD-Audio players we've seen so far, the JVC XV-D723 has extensive, but not complete, bass management. Most notably, bass-management options do not affect the analog outputs when you're playing a DVD-Audio disc — all six channels are set for full-range output.

Setup completed, I plopped down on my futon and rewarded myself with some movies and music. *The Bone Collector* is a gripping film whose anamorphic DVD transfer captures a dark urban netherworld. Using Angelina Jolie as his agent, bedridden quadriplegic detective Denzel Washington must outwit a murderous Manhattan taxi driver. In Chapter 8, every bit of rust and grime in the murderer's subter-



The JVC player convincingly rendered the dark urban netherworld that a crippled Denzel Washington explores by proxy in *The Bone Collector*.

ranean lair was clearly visible — as he dispatched a victim, I could see the beads of sweat on her trembling face. In Chapter 13, three detectives go underground; their flashlights shine in the darkness, creating bright halos and diffuse beams in the misty air. The JVC player reproduced this scene with no visible artifacts, cleanly detailing the patterns in the illuminated mist.

The player's decoders handled both the Dolby Digital and DTS soundtracks on this disc very well. Some of the grisly scenes were particularly effective. In Chapter 6, for instance, Jolie ventures into a dark concrete jungle and discovers a partly buried body and then flags down a speeding train. The sound of dripping water and muttering thunder surround her, and then the roar of the train, its whistle, and its screeching brakes all reverberate in the concrete space. Later, in the pool-hall scene in Chapter 11, a drum kit is placed forward in the mix, and its sound slaps back from the surround channels, effectively putting the listener inside the seedy space.

Turning to more wholesome distractions, I played the recent DVD-Audio version of Natalie Merchant's *Tigerlily*. These songs have been tastefully (if somewhat boringly) remixed for 5.1 channels, with a fairly traditional stereo panorama that is usually extended directly back into the surround channels. In many of the songs, the vocals are strongly placed in all five chan-



nels, only slightly louder in front. The effect is to surround you with the vocal line, giving it both an importance and an intimacy stereo cannot provide.

There are a number of nice examples of how multichannel reproduction can enhance musical expression. For instance, in "San Andreas Fault," the acoustic guitar and keyboard are heard more strongly from the rear than the front while the lead vocals and percussion are placed firmly in front. At the end of the song, the answer vocals are placed in the back — this is especially pleasing when the lead and answer vocals resound in unison from all four corners of the soundstage. The LFE channel is mainly used for the kick drum and bass guitar, compensating for any bass deficiency in the main speakers.

My M&K speaker system handled the 5.1-channel mix well, and sound quality was excellent, but I wish I could have tried

a "small" speaker setting and also varied the high-pass cutoff frequency to suit my satellites. But, as already noted, such options are not available for DVD-Audio playback on this player. Still, the combination of high-performance audio encoding and surround sound mixing made this a terrific listening experience.

The owner's manual advises that the XV-D723GD cannot play CD-R or CD-RW discs, but it played the CD-RWs I tried. Our first review sample also locked up intermittently playing several DVDs (a second sample had no problems), and I'm not crazy about the cramped remote and lack of DVD-Audio bass management. Still, it's impressive that for the price of a good DVD-Video player, the XV-D723GD essentially throws in DVD-Audio for free. More important, the pieces of the DVD-Audio puzzle are falling into place, and I like what I hear.

in the lab

DVD-AUDIO PERFORMANCE

All tests were done using a custom-made test DVD-R consisting of computer-generated signals containing dither, which sets performance limits on distortion and noise. All measurements were made with "large" speaker settings, subwoofer on, through the player's multichannel analog outputs. Results are representative, not necessarily worst-case. In all cases, the kHz figures in the test conditions (left) represent the sampling rate of the digital signal.

Noise level (re -20 dBFS, A-wtd, 24-bit

oigridio)	
44.1/48 kHz	90.7/-90.8 dB
88.2/96 kHz	91.0/-91.0 dB
176.4/192 kHz	89.0/-89.0 dB

Frequency response

44.1 KHZ	20 HZ 10 20 KHZ +0.2, -0.02 UB
48 kHz	.20 Hz to 21.3 kHz +0.18, -0.03 dB
88.2 kHz	20 Hz to 38.06 kHz +0, -0.28 dB
96 kHz	20 Hz to 46.0 kHz, +0, -0.33 dB
176.4 kHz	20 Hz to 76.3 kHz +0, -0.9 dB
192 kHz	20 Hz to 83.2 kHz +0, -1.0 dB

Excess noise (re perfect 24-bit p	performance)
48/88.2/96 kHz	+32.3 dB
176.4 kHz	+34.9 dB
192 kHz	+34.5 dB

Noise modulation

44.1/48 kHz	0.9 dB
88.2/96 kHz	0.2 dB
176.4/192 kHz	1.75 dB

DVD-VIDEO PERFORMANCE

Measurements were made from a variety of DVD test discs, all through the player's composite-video output except as noted and using the player's Normal screen mode.

NA	bita lavel		OIDE	
Maximum	white-level	error.	±0 IRE	

Setup level	
Differential gain4%	
Differential phase1°	
Horizontal luminance frequency response (re level at 1 MHz)	
at 4 MHz0.92 dB	
at 5 MHz1.4 dB	
at 6 MHz1.9 dB	
at 6.75 MHz (DVD limit)2.0 dB	
Onscreen resolution540 lines	
Pixel croppingleft 4, right 4, top 0, bottom 0	
In-player letterboxingpoor	
Component-output level error (Y/P _r /P _b)+13.4/+14.1/+14.2%	

O IDE

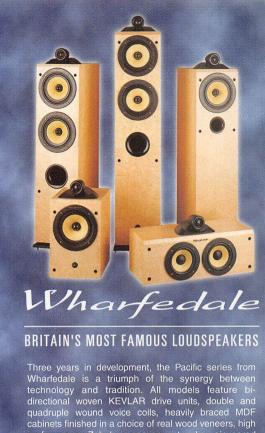
Aside from the typical DVD player faults of poor in-player letterboxing and a subwoofer output that overloaded with worst-case test signals (unlikely to be encountered with "real" software and an irrelevant parameter if you use the player's digital output to feed an external Dolby Digital decoder), the JVC XV-D723GD did very well on the test bench. The slight rolloff of the video luminance frequency response was visible only on test patterns. The DVD-Audio performance indicates that the player provides at most 19 bits of resolution on its analog outputs, which is state of the art for now.

(P_r/P_b)+11/+10 nanoseconds

Component-output timing error

Both Dolby Digital and CD playback performance were also excellent, with very low noise levels, especially in CD playback. The 16-bit CD excess noise (EN16), for example, was only 0.05 dB above theoretical perfection!

- David Ranada



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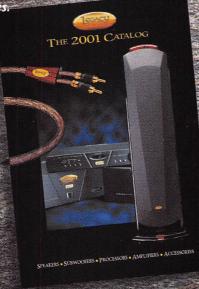


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NAD

C660 CD Recorder/MP3 Disc Player



s the stand-alone CD recorder has become a mainstream audio component, manufacturers have begun vying to deliver the best value and performance. Witness the new NAD C660, its first optical-disc recorder. Not only is the C660 one of the first home recorders able to dub at 4x speed, but it also joins the even fastergrowing set of CD and DVD players able to play discs containing MP3 music files.

Like many other CD burners, the NAD recorder has a dual-tray layout with two independent disc transports. One is for playback only, and the other records and plays. You can access and control both "sides" of the C660 simultaneously to use them independently in a multiroom system.

As in most two-tray burners, the playonly drawer is on the left and the recorder on the right. Identical sets of transport controls reside above each tray, and ten record and mode keys are between them. In typical NAD fashion, the recorder's frontpanel labels use relatively large, readable white-on-gray lettering. But I wasn't crazy about the controls themselves, most of which are identical round buttons.

In terms of its inputs and outputs, the NAD is the best-equipped CD burner I've seen. Its back panel has stereo analog RCA output jacks for its player side and both input and output RCA jacks for the recorder side. And there's a coaxial digital output for the player side and both coaxial and optical digital inputs and outputs for the recorder. The front panel has a second optical input for occasional hookup of a portable player, a computer — whatever. You select which input will feed the recorder side via a front-panel (or remote) input key, which cycles through the options. (Of course, when you're recording from the player side the digital connection is made automatically without wires.)

Since the NAD is the first CD burner with MP3 playback capability I've used, I began by loading a CD-RW disc (made on my PowerMac) containing a bunch of MP3 songs. After a 19-second interval during which the NAD's display flashed "TOC" (table of contents), the C660 dutifully began playing the first song, a bootleg of Nirvana from some long-forgotten concert. Sound quality appeared to mirror that of the original MP3s perfectly, which is to

say that it ranged from dismal to remarkably good, depending on the bit rate and encoding quality of the original files.

The C660 lets you skip, randomize, and program MP3 tracks just as you would for normal CD playback — like some other

fast facts

KEY FEATURES

- Record and play-only trays
- Records CD-R and CD-RW discs
- Plays MP3 files from CD-R/RW discs
- 4x speed
- Bit-accurate internal dubbing
- Independent analog and digital outputs for play and record sides
- Auto synchro recording
- Coaxial and optical digital recorder inputs on rear, plus coaxial input on front
- Sampling-rate conversion for digital dubbing from non-CD digital sources
- HDCD decoding (player side only)

DIMENSIONS 173% inches wide, 43% inches high, 131½ inches deep

WEIGHT 11 pounds PRICE \$999

MANUFACTURER NAD Electronics of America, Dept. S&V, 6 Merchant St., Sharon, MA 02067; phone, 781-784-8586; Web. www.nadelectronics.com

test report

HIGH POINTS

4x internal dubbing.
Independent play permits
multisource use.
Front-panel digital input.

LOW POINTS

So-so ergonomics and display.

No random or programmed play from both discs.

Fixed-volume headphone jack.

MP3 players, however, it doesn't offer audible fast search for MP3 tracks. Since a CD might contain as many as a hundred pop songs in MP3 format, the C660 has some serious long-play capability, especially if you play from both trays sequentially. It even displays the first six characters of MP3 filenames, but you can't scroll the filenames or search for them on a disc.

As a CD player, the C660 proved outstanding. Sound was clear, highly detailed, and effortlessly extended. Exemplary recordings like Diana Krall's *Love Scenes* (Impulse!) sounded pristine, with estimable detail and "air." I also dubbed several CDs and many tracks, copying at 2x and 4x speeds as well as at normal speed for analog dubs. The 4x dubbing was indisputably boss: the C660 cloned my treasured Paul Revere & the Raiders *Greatest Hits* CD in 7 minutes, 43 seconds — whoa!

In every case I was unable to discern any difference between the originals and the digital copies. Even the analog-input copies were virtually indistinguishable from

the originals as long as I set the record levels carefully. The C660 also has a digital record-level control that can adjust a digital recording by ±3 dB, manually or automatically, but no analog-input limiting. With the control disengaged, the recorder made bit-accurate copies at both 2x and 4x.

While the C660 was reasonably easy to use overall, I was disappointed that there's no quick way to automate copying a single track other than by creating a "program" consisting of one selection. I also found the

front-panel display tricky to read in bright light.

The C660's remote handset has its good and bad points. Button spacing is generous and labels are readable, but 46 of 52 keys have the identical small, round shape! The remote's single set of transport keys controls both sides of the C660, so you have to press CD Play or CD Rec to let it know which one you want to operate. There's no visual indicator, so it's easy to forget which one the remote is set to.

NAD makes good use of the C660's dual trays. If a disc is loaded in each side and you press play, when one disc finishes, the other automatically begins. If you select random play, the NAD randomizes each disc in turn but cannot play tracks randomly from both discs, nor will it let you program a sequence of tracks from both discs.

NAD's C660 has a lot going for it. It's one of only a handful of 4x stand-alone burners. It plays MP3s. It gives you, in ef-



Diana Krall's 1997 *Love Scenes* CD sounded pristine on the NAD C660.

fect, two independent single-disc players in one. And it is a great-sounding CD player. On the other hand, it costs nearly twice as much as several other dual-transport CD recorders (though none I'm aware of do 4x copying). Bottom line: If you're concerned with sonics, technical performance, and versatility, you can't go wrong with NAD's new dual-tray burner.

in the lab

DIGITAL-INPUT RECORDING

Bit-accurate at 44.1-kHz sampling rate.

ANALOG-INPUT RECORDING

All measurements were made through the recorder's digital output and show how a disc recorded on the C660 will play back on a theoretically "perfect" CD player. For all except input sensitivity, the record-level control was set to a point that lit up the first red segment in the indicator with a 2-volt input. This produced a –21-dBFS recording from a 200-millivolt input, our reference level for the noise measurement.

Input sensitivity (to produce a recorded 0-dBFS level, record level full up)335.8 mV

Noise level (A-wtd).....-68.9 dB

Frequency response 20 Hz to 20 kHz +0.01, -0.12 dB

CD PLAYBACK, ANALOG OUTPUTS

All measurements were made from the playonly side. The test signals all contained dither.

Frequency response 20 Hz to 20 kHz +0.1, -0.1 dB

MP3 PLAYBACK, ANALOG OUTPUTS

All measurements were made from the playonly side. The test signals, prepared by a professional-grade Fraunhofer Version 3.1.1 MP3 encoder at 128 kbps, all contained dither, which sets limits on measured distortion and noise performance.

Excess noise (with/without signal)
16-bit (EN16).....+6.9/+2.2 dB

Frequency response 20 Hz to 20 kHz +0.07, -0.11 dB

Measured from the player side, the NAD C660's CD playback was uniformly superb. Its digital-to-analog linearity, noise level, excess noise, and frequency response were all of benchmark-quality. The channels matched almost perfectly, too — channel imbalance was barely 0.05 dB.

The MP3 measurements were close to CD quality, which is unusual. MP3 sound quality on the C660 will be limited primarily by the encoding system used to make the recordings.

The C660's analog-input recording didn't come up to quite the same level as its playback quality or digital recording quality, being limited primarily by slightly too high background noise level. But that won't be a problem when you're dubbing from inherently noisy sources like LPs, cassettes, or radio broadcasts. You'll have about 1 dB of "headroom" between when the first red segment of the record-level indicator turns on and when the analog inputs truly overload.

— David Ranada



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Jamo

E 8 Home Theater Speaker System



anting to drown myself in sound by diving into the fantastically recorded DVD of *The Perfect Storm*, I assembled a suite of home theater speakers from Jamo's "Essential" series, which aims to balance value, quality, and size in systems geared to family entertainment. Starting with a couple of E 870 towers for the front left/right positions, I added an E 8CEN center speaker, a pair of E 8SUR surrounds, and an E 8SUB subwoofer.

The E 870 is a slender speaker that stands about waist high and occupies less than a square foot of floor space. Its three-

way design combines a textile-dome tweeter with three paper-cone drivers — one midrange and two woofers. Like the other speakers in this system, the E 870 is available with a beech (shown), cherry, or black vinyl finish and has a specially tapered port, which is said to improve sensitivity without increasing port noise.

Like most center-channel speakers, the E 8CEN sandwiches a tweeter between two woofers and is designed to sit on top of your TV. The trapezoidal shape of the E 8SUR surround speakers suggests a dipole design at a glance, but closer inspection reveals a three-way system with a tweeter and woofer on one "side" and a single mid-

range driver on the other. Jamo says the design provides deeper bass. At just over 9 pounds, the E 8SUR is light enough to hang on a wall, but no keyhole or mounting bracket is supplied. The speaker is also available in white.

Completing the package is the E 8SUB, which packs a 10-inch driver and a 200-watt amplifier in an enclosure with sides about 16 inches square. The front panel contains a flush level-adjustment knob, while the rear panel has one knob for continuous phase adjustment and another to set the cutoff frequency between 40 and 150 Hz. Unlike many subs, it has no speaker-level inputs, so you have to make a line-level connection to the subwoofer (or LFE) output on your receiver or preamplifier.

Five-way binding posts secure connections on all the speakers, and removable jumper straps on the E 870 towers permit them to be biamplified or biwired. The tower enclosures are 2-inch-thick mediumdensity fiberboard (MDF), and the others use 1³/4-inch MDF. Jamo softens the appearance of the sharp-edged rectangular towers with grilles that are slightly curved at the top and modestly tapered at the bottom. The center and surround speakers also use modified versions of this grille design, which goes a long way toward giving these speakers a distinctive, attractive look.

I powered all five main speakers with 100 watts each. I placed the front towers 3 feet out from the front wall of my 12 x 22foot home theater and 2 feet from the side walls, toed in toward the listening position. The center speaker was positioned horizontally on a stand 18 inches off the floor, immediately beneath the screen of my 56inch Toshiba rear-projection TV. I put the surrounds on wall shelves slightly above ear level in my listening position and a little behind me, the same position I normally use for the dipole surrounds in my B&W reference system. I put the sub about 18 inches away from the front and side walls, directly behind the left front tower.

The Perfect Storm justifies getting a good digital surround sound system as much as any DVD currently on the market. Director

HIGH POINTS

Transparent sound. Compact L/R towers require minimal floor space. Very well-matched tonal qualities. Effortless dynamics.

LOW POINTS

Slightly bright sound lacks visceral punch. Difficult to match subwoofer with satellites for smooth bass response. Pricev.

Wolfgang Peterson paid attention not only to the video special effects but to the audio effects as well. It was a great movie to give the Jamo E 8 system an intense workout.

The movie opens with the swelling theme music by James Horner, who seems to have been heavily influenced by Aaron Copland. The five-channel mix totally engulfs the listener, foreshadowing the allencompassing sea itself. The E 8 system acquitted itself well in reproducing this lush, string-heavy opening music, which sets the emotional stage for the film. Later, disaster draws near and the soundtrack boils with crashing waves - an ideal test for front-speaker timbre matching. I heard no variations in tonal balance as the sea roared through my home theater. The waves sounded like they were washing across the room.

A very slight upper-midrange emphasis

helped the dialogue float atop the roaring wind and water. Speech stayed pegged to the screen and was always clearly audible, no matter how fierce the storm — a tribute both to the filmmakers and to Jamo's engineering. On the down side, that subtle upper-midrange rise also accentuated mouth noises and lip smacking in the supplemental commentary by author Sebastian Junger.

bright as to distract me from of The Perfect Storm on DVD. enjoying the system, which ex-

celled in transparency. The slightest effects, such as the creaking of the boat and the rattling of the glass in the chandelier in the Crow's Nest bar, were clearly audible even when layered in a wash of other sounds. The chains clanking against the superstructure of the Andrea Gail sounded like they were in the room.

The only ripple in this smooth sailing came from occasional localizing effects in the surround channels - I felt more aware than usual that there were surround speakers behind me. Adjusting the position and level of the surrounds reduced but did not eliminate this minor distraction.

Properly adjusting the subwoofer is the key to fully enjoying the Jamo E 8 system. In my room, the towers alone didn't quite provide the visceral punch I craved. Finetuning the subwoofer's cutoff point to



The overall sonic spectrum The Jamo speakers did an almost perfect job of was mildly bright, but not so reproducing the engulfing 5.1-channel soundtrack

about 100 Hz appreciably reinforced the low end. Even after several adjustments and minor repositionings, however, the sub did not quite pump the "whump" I've come to expect from the best home theater systems. The bass was accurate, just not always authoritative.

The system exhibited ample dynamic range, even at fairly high listening levels. The speakers gave little sign of distress even as the most dramatic effects demanded all the power my amplifier could deliver. Like the sea, these speakers could swell from calm to crescendo instantly, and seemingly without effort.

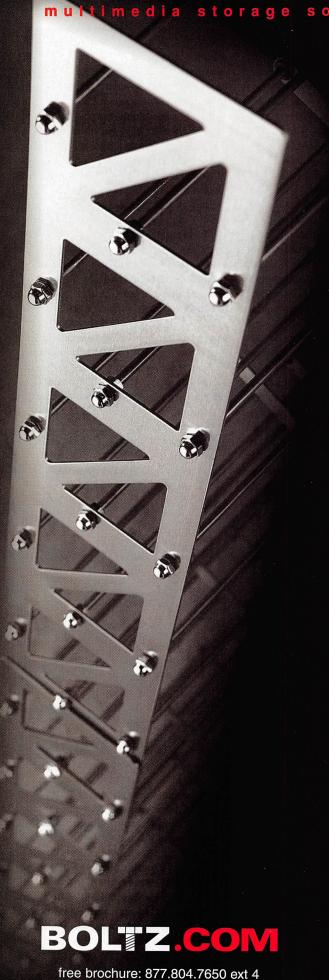
The Jamo E 870 towers did justice to two-channel music, too. Imaging was good, and it improved when I repositioned them slightly closer together than their theater stance. As a byproduct of their transparency, the speakers displayed an uncanny ability to extract ambience from recordings, whether natural or synthetic reverb. However, they were slightly sibilant on vocals, and they certainly revealed close vocal miking. Listening to recordings made in my radio studio, I could hear every nuance of the artist's technique - sometimes, embarrassingly, more than I desired.

Using the music surround modes of my Lexicon surround processor smoothed the towers' sound a bit and made the sibilance less noticeable. In fact, with the processing the E 8 system complemented the music splendidly, with sound so even that it seemed to shimmer. And with the subwoofer added, the bass was satisfying. The opening note of Joni Mitchell's "Chinese Café"/"Unchained Melody," rereleased on Hits (Reprise), resounded ominously throughout. The system's transparency favored the piano in this recording, clearly

		ast fact	S	
	E 870 (L/R front)	E 8CEN (center)	E 8SUR (surround)	E 8SUB (subwoofer)
TWEETER	1-inch dome	1-inch dome	³ / ₄ -inch dome	
MIDRANGE	5½-inch cone	—	3½-inch cone	——————————————————————————————————————
WOOFER	two 51/2-inch cones	two 51/2-inch cones	5½-inch cone	10-inch cone
ENCLOSURE	vented	vented	vented	vented
POWER			-	200 watts
DIMENSIONS (WxHxD)	67/8 x 393/8 x 133/4 inches	18½ x 6½ x 8 inches	11 x 103/8 x 11 inches	161/4 x 131/2 x 161/4 inches
WEIGHT	42½ pounds	171/4 pounds	9½ pounds	373/4 pounds
FINISH	black, beech, or cherry vinyl veneer		black, beech, cherry, or white vinyl	
PRICE Total: \$3,135	\$699 each	\$339 each	\$299 each	\$800 each

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test report

defining each note in Mitchell's sonic painting.

The Best of Sessions at West 54th, Volume 1, a Columbia Music/Legacy DVD. awakened the subwoofer with some substantial bass from the kick drum in "Back to Basics" by Wynton Marsalis with the Lincoln Center Jazz Orchestra. The same was true with the electric bass on the Suzanne Vega track, "Caramel." There and on the Richard Thompson track, "I Feel So Good," vocals sounded balanced and natural, although still with a slight sibilance.

In general, when reproducing music, whether two-channel or surround, the Jamo E 8 system leans more toward the analytical than the warm side. The system reproduced ample detail, such as the difference between a pick and a fingernail on a guitar string - serious musicians could probably tell what brand of strings. Yet the sound remained cool and somewhat distant. Unlike with movie special effects, I never quite felt that the musicians were in the room with me.

Jamo, which manufactures its speakers in Denmark, faces the challenge of exchange rates more than technology or quality. The E 8 system competes with U.S.made speaker systems that may offer comparable performance for slightly less money. But it also produces a lot of sound for its size and requires minimal floor space. If it appeals to your sonic sensibilities and fits your home theater, the well-executed E 8 system is a good value.

in the lab

FREQUENCY RESPONSE (at 2 meters)	
front left/right48 Hz to 20 kHz ±3.3 dB	
center79 Hz to 20 kHz ±4.5 dB	
surround85 Hz to 10 kHz ±3.6 dB	
subwoofer36 Hz to 137 Hz ±2.8 dB	
SENSITIVITY (SPL at 1 meter with 2.8 volts of pink-noise input)	
front left/right85 dB	
center88 dB	
surround85 dB	
IMPEDANCE (minimum/nominal)	
front left/right3.7/12 ohms	
center4.9/12 ohms	
surround5.5/8 ohms	
BASS LIMITS (lowest frequency and maximum SPI, with limit of 10% distortion at 2 meters in a	

SPL with limit of 10% distortion at 2 meters in a

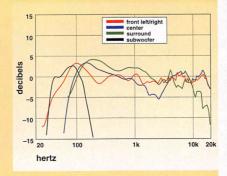
front left/right	40 Hz at 93 dE	SPL
center	40 Hz at 69 dB	SPL
surround	50 Hz at 65 dB	SPL
subwoofer	25 Hz at 86 dE	SPL
99 dB aver	age SPL from 25 to 6	62 Hz
105.6 d	B maximum SPL at 6	62 Hz

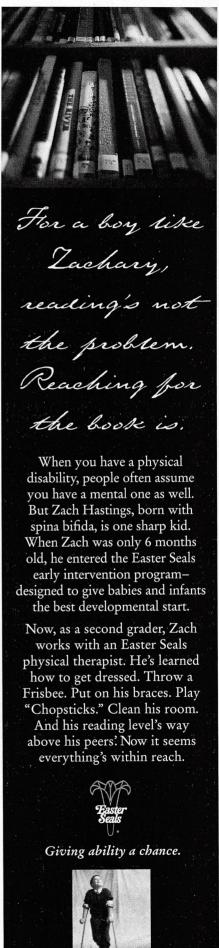
All of the response curves in the graph are weighted to reflect how sound arrives at a listener's ears with normal speaker placement. The E 870 front left/right speakers were averaged over a ±30° window, with double weight given to the most typical listening angle, 30°. The E 8CEN center speaker was averaged over ±45°, with double weight directly on-axis where the primary listener would sit. Because sound from surround speakers will have been reflected from room surfaces, response of the E 8SUR was averaged over a ±60° window, with double weight 60° off-axis.

The E 870 tower had unusually smooth directivity over the full ±30° window, although output dropped off sharply above 10 kHz at 30°. Bass output was strong down to 40 Hz. The E 8CEN's response had a relatively mild 2.5-kHz notch directly on-axis, and it increased in severity dramatically as soon as the microphone was moved off-axis. Our averaging technique tends to downplay the degradation of performance for off-axis listeners. The E 8SUR's response also differed significantly as the measuring angle changed. Its highfrequency response was much stronger toward the side of the cabinet that has the tweeter. Placing the surround speakers above a seated listener's ears should reduce the audibility of these variations, and the speaker's overall spectral balance suggests good surround performance

Bass limits for the E 8SUB subwoofer were measured with it set to maximum bandwidth and placed in the optimal corner of a 7,500cubic foot room. In a smaller room users can often expect 2 to 3 Hz deeper extension and up to 3 dB higher sound-pressure level (SPL) from the subwoofer

The E 8SUB produced a maximum of about 105 dB SPL at 40 Hz and above. Response fell quickly below 40 Hz, but the subwoofer still put out 86 dB SPL at 25 Hz. The crossover had true 24-dB-per-octave slopes, with no changes in level as I turned the crossover frequency dial. The dial is marked only at each extreme, and the actual turnover frequencies measured 137 Hz at the highest setting, marked 150 Hz, 90 Hz at the 12 o'clock setting, and 58 Hz at the lowest setting, marked 40 Hz. — Tom Nousaine





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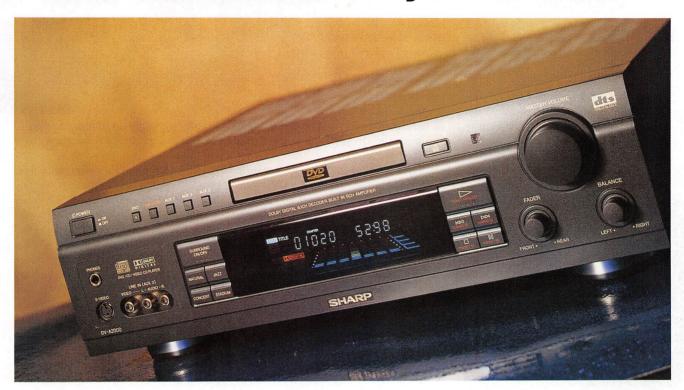
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Sharp

DV-A2000U DVD Player/Receiver



or decades this magazine's predecessors, Stereo Review and Video, emphasized the advantages of "separate" audio and video components and generally ignored products aside from stereo and A/V receivers - that fully integrated traditionally separate functions. But now, to a great extent, at least the technical arguments for the superiority of separates have vanished.

Modern integrated-circuit designs and manufacturing techniques, as well as the widespread use of the same complex IC chips (particularly for digital-to-analog converters and surround sound decoders) in both high-end and entry-level products, have removed many of the performance limitations we used to find in heavily integrated gear. Sharp's DV-A2000U, combining on a single chassis a DVD player and a digital surround receiver, is an excellent example of the integrated approach with all its advantages and the remaining disadvantages.

The most important advantage of com-

bining a DVD player and a receiver is a huge decrease in the complexity of hooking up a system. Gone is the confusing multitude of cables running between the player and receiver, and so is the need to check whether your receiver can handle the specialized video and digital audio signals coming out of the player. Reducing connection complexity has indirect benefits as well, because the cost of the eliminated input and output connections can be applied elsewhere. With the DV-A2000U, for example, you get a component-video output (as well as more conventional composite- and S-video outputs), something that most receivers in its price class don't

Setup and remote operation are simplified, too. In contrast to even the most basic separate DVD players and receivers, the DV-A2000U's onscreen setup menu has only four (!) functions: TV/Mode to select standard 4:3 aspect ratio or widescreen 16:9; Parental to set the access level for DVD playback; Speaker to select bass-

fast facts

KEY FEATURES

- A/V receiver with built-in DVD player
- Dolby Digital and Dolby Pro Logic
- Four DSP ambience-enhancement modes for stereo signals
- Both speaker- and line-level subwoofer
- 2 composite/S-video inputs, 1 output; component-video output
- Coaxial and optical digital audio outputs
- AM/FM stereo tuner with 40 station presets
- Left/right front-balance control, front/surround balance control

RATED POWER 40 watts x 6 into 8 ohms from 60 Hz to 20 kHz with 0.9% THD, channels driven in pairs

DIMENSIONS 163/4 inches wide, 51/8 inches high, 151/2 inches deep

WEIGHT 201/2 pounds

PRICE \$800

MANUFACTURER Sharp Electronics, Dept. S&V, Sharp Plaza, Mahwah, NJ 07430-2135; phone, 800-237-3277; Web, www.sharp-usa.com

test report

HIGH POINTS

Easy to set up and use.
Component-video output.
Good audio and video performance.

LOW POINTS

No digital audio inputs.

No multichannel analog audio input.

No DTS decoding.

No video or audio record loops.

management settings for speaker size, relative channel levels, and delay times; and Pro Logic on/off (selecting on rather than off makes Pro Logic the default mode for everything except Dolby Digital 5.1-channel material). Having the same remote control handle both DVD and receiver func-

tions not only decreases the handsets cluttering up your coffee table but also eliminates the sometimes laborious task of programming a "universal" receiver remote with commands for your DVD player.

All this simplicity, though, is a two-edged sword. While it can slice through the knot of cables usually dangling from the back of an A/V receiver, it can also cut into a product's versatility and even, paradoxically, its ease of use. For example, having to enter the setup menu — which itself is possible only

when the internal DVD player is selected as the signal source — to turn Pro Logic decoding off for plain old stereo listening, and then on again for Dolby Surround programs, is a bother. This should be a one-button remote function. While many people listen to all stereo sources using Pro Logic, it's nice to be able to switch it off easily for cassette tapes and FM broadcasts, which can produce distractingly high noise levels with Pro Logic decoding.

Simplicity can also reduce the versatility of the rear-panel facilities. Speaker hookup is simple in this case, with snap-clip connectors that are much easier to use, though less versatile, than typical multiway binding posts. Besides the full complement of video outputs, the Sharp DV-A2000U has two A/V inputs with both composite- and S-video connectors (one is on the front panel), one audio-only stereo input, line-level analog stereo and subwoofer outputs, and one coaxial and one optical digital audio output.

But that's all you get. There are no exter-

nal digital inputs of any kind, nor is there a multichannel analog input for a DVD-Audio or SACD player. There are no video or audio recording loops: a VCR can be hooked up only as a program source, not a recorder, and if you want to hear the output of an audio recorder you've connected, you might have to displace another input source. And because the receiver has no internal DTS decoder (there's a "DTS DIGI-TAL OUT" logo on the front panel, which is accurate but easy to misread), the manual advises that you "need a DTS digital surround decoder and an ampifier with a 5.1ch input jack" - essentially another complete A/V system! — to play DTS-encoded programs.

It's clear that the Sharp DV-A2000U can't be all things to all people. But if you stay within its limitations, it's quite a nice performer. It can't play really loud (see "in the lab"), but those who'd be interested in the DV-A2000U in the first place probably wouldn't buy it for a large home theater room and (like most people) will play it substantially below movie-theater sound levels. Its power capabilities are adequate for moderately high volumes in a small to medium-size room.



The Sharp DV-A2000U was certainly up to reproducing the visual richness of *The Bridge on the River Kwai*.

Video quality was very good through the component- and S-video outputs, slightly less crisp with the composite-video output. The DV-A2000U was certainly up to the task of accurately reproducing the visual richness of The Bridge on the River Kwai (Columbia/TriStar) as well as the strange changes in picture quality that accompany some scene transitions on the DVD. The vivid colors of the stupendous Princess Mononoke (Miramax) — a combination of mystical fantasy, animated epic, and environmental-impact statement — also came out as brilliantly on DVD as when I saw the film in theatrical release. The breathtaking use of silence in the Mononoke soundtrack was well served by the clean Dolby Digital decoding.

I was pleasantly surprised at how useful the receiver's Natural ambience-enhancement mode was with all kinds of music, but that's because it's rather subtle in its effect. The more ambitious Jazz, Concert, and Stadium modes were less beneficial (why anybody would want to listen to anything through *any* receiver's Stadium mode is beyond me). As usual for such systems, the Virtual Dolby Surround processing (which operates only on DVD sound-



tracks) didn't fully succeed in producing the impression of surround speakers from just a front left/right pair. I had to sit at a point almost precisely equidistant from the speakers (within a couple of inches) for the most vivid effect.

On the whole I was perfectly satisfied with the DV-A2000U's sound and picture quality, and even with the DVD player's stripped-down transport controls (there's no frame-stepping or slow motion in reverse, for example). Sharp has made mostly wise decisions on what to omit from this combo, what to keep, and how to implement it. As a simple-to-set-up DVD player/receiver for the kids to use (remember that parental access control is one of the few variables in the setup menu), as the movies and music source for a bedroom or study, or even as the centerpiece of a small home theater, the Sharp DV-A2000U might be a wise choice for you, too.

in the lab

0 IDE

DVD-VIDEO PERFORMANCE

Maximum white level error

Measurements were made from a variety of DVD test discs, all through the player's composite-video output except as noted.

Setup level+7.5 l	RE
Differential gain	3%
Differential phase	.6°

Horizontal luminance frequency response (re level at 1 MHz, composite/component output) at 4 MHz.....-0.9/-0.35 dB

Onscreen resolution	540 lines
at 6.75 MHz (DVD limit)	10.1/-8.4 dE
at 6 MHz	6.0/-4.4 dB

Pixel cropping	left 2,	right 6,	top 0,	bottom 0
In-player letterb	oxing			poor

Component-output level error	

$(Y/P_r/P_b)$+2.7/-9.0/-9.7% Component-output timing error

(P_r/P_b).....+7/+9 nanoseconds **DOLBY DIGITAL PERFORMANCE**

All tests used computer-generated Dolby Digital signals incorporating dither, which sets limits on measured distortion and noise performance. Reference input level is -20 dBFS, and reference output is 1 watt into 8 ohms, obtained with the volume control set to +1. Dialogue normalization in test signals was 31 dB. All tests were made using the "5-channel" speaker setting except for filter and subwoofer measurements, where "5.1-channel" was used. Speakerbalance settings were 0 dB except for the surrounds, which were +1 dB. All are worstcase figures where applicable.

Output at clipping (1 kH	Hz into 8 ohms)	
one channel driven	45 watts (16.5 c	(WBb
five channels driven	30 watts (14.75 d	BW)

Distortion at 1 watt	
(THD+N, 1 kHz, 8 ohms)0.	057%

Noise level	(16-bit signal,	A-wtd)	68.2	dB

Excess noise (with signal) 16-bit (EN16).....+7.25 dB

Frequency response front left/right...20 Hz to 20 kHz +0.04, -1.53 dB

center/surrounds....115 Hz to 20 kHz +0.04, -3 dB

Channel imbalance

(at reference output level)0.27-dB spread

Subwoofer-output frequency response

-12 dB/octave rolloff above -3-dB point of 110 Hz

High-pass-filter frequency response

-6 dB/octave rolloff below -3-dB point of 115 Hz

Maximum subwoofer output......1.8 volts

Subwoofer distortion (5.1-channels, 31-Hz, 0dBFS signal played at reference level).....0.08%

STEREO CD PLAYBACK

All test signals were computer generated and incorporated dither. Volume setting for reference output level was +1.

Output at clipping (1 kHz, 8/4 ohms)

8	ohms40	watts	(16	gRM)
4	ohms		.50	watts

Distortion at 1 watt (THD+N, 1 kHz)

Noise level (16-bit signal, A-wtd)-72.7 dB

Excess noise (without signal)

16-bit (EN16))	+2.25 dB
quasi-20-bit ((EN20)	+17.5 dB

Frequency response

20 Hz to 20 kHz +0.01, -1.54 dB

The DV-A2000U's video performance was good, with the in-player letterboxing no worse than usual. Unlike most of the DVD players we've tested, this one showed a distinct and visible improvement in the flatness of its horizontal luminance frequency response with the component-video (and also S-video) output rather than composite-video. Because it wouldn't play the CD-R and CD-RW discs that hold our test signals and has no digital inputs, I couldn't run several of the audio tests we normally publish. What I was able to test came out fairly well. Noise levels in Dolby Digital playback were good, though the worst case (for the center and surround channels) was a bit higher than the -70-dB level we look for.

The DV-A2000U's output power figures are on the low side. But if you can get adequately loud sound with your speakers in your room with the volume control set no higher than -5 or -6, there's little chance you'll ever overload the - D.R. amplifier section.



The S2 Nucleus Micro

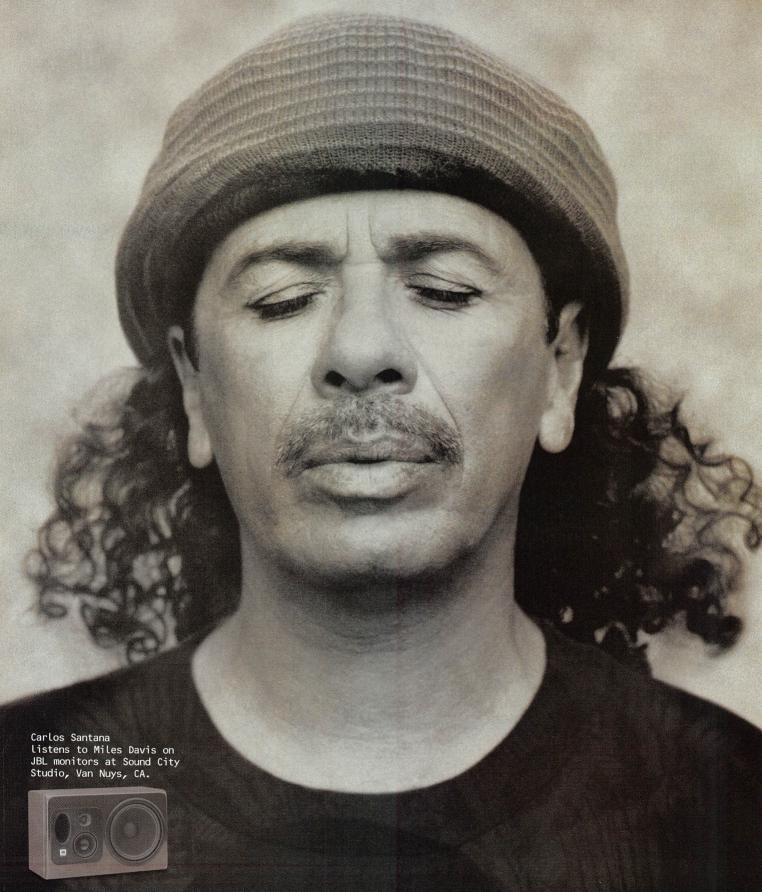
Offered in eight decorator colors, they blend with any lifestyle or room decor. Systems start at \$699.00 with lifetime warranty.

Never before has so much dynamic realism been available in such a small enclosure.



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Anthony Gallo Acoustics products are available at over 200 U.S. audio /video dealers. 20841 Prairie Street, Chatsworth, CA 91311 USA



Great JBL sound is heard in recording studios, concert halls, nightclubs and movie theaters around the world. Like House of Blues. Hard Rock Cafe. And Lowe's Cineplex.

COMES HOME.

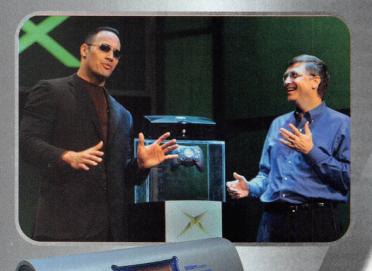


Great JBL sound is also available in convenient take-home sizes. Like the Studio Series home-theater speakers, perfect for both movies and music. www.jbl.com or 1.800.336.4JBL.

by Michael Gaughn

Photography by Andy Kuno

SHOWSTOPPERS



Left, Uniden's Internet radio; opposite page, the Mirage OM-1 speaker. orget about J. Lo and Eminem, Britney and Buffy, Maxim and The Matrix, goateed swingers, exotic martinis, Keanu, Leonardo, and every other manifestation of contemporary cool. Bill Gates and The Rock want you to know that computer guys are where it's at, baby. The Nerd Emperor of the Known Universe hired the WWF champ to play Jim to his Huck for the first public demonstration of his much-anticipated Xbox game system — the PlayStation 2 killer that Gates hopes will take Microsoft off your desktop and into your living room. The Consumer Electronics Show used to be about who had the biggest speaker and the brightest TV; now it's more about who wants to control your home.

Digital Domains

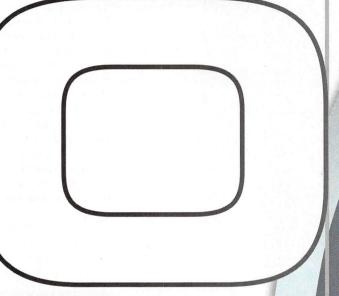
It was significant, of course, that Gates chose CES to introduce the DVD-based game system — which is why the world media flocked to his opening-day speech (for more on Xbox, see "Multimedia Maven," page 112). Even more significant was the sheer number of computer-related companies at the show, many of whom barely registered on the CES radar just three years ago. From Intel to AOL, Microsoft to Sun, Creative Labs to 3Com, the roster of exhibitors was a roll call of digital movers and shakers, big and small.

More than anything else, CES 2001 was about raising convergence to the next degree. Showgoers were hard-pressed to find a home-entertainment product that didn't somehow rely









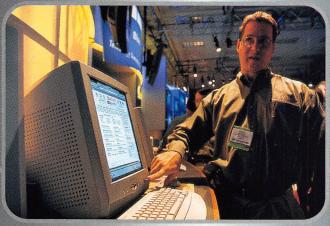
on a microchip, feature digital compression or some kind of Web access, or otherwise flaunt its new-tech savvy. This was the show where the industry stopped shunning MP3 as a renegade technology and started embracing it as a sales tool, putting it in everything from minisystems to sunglasses (see "Digital Horizons," page 46); where A/V stalwart Sony decided to show the computer guys how to sell an Internet appliance while fellow stalwart Harman Kardon introduced an entertainment gateway of its own (see page 84).

There were plenty of TVs, receivers, and even radios to be seen, but their familiar, even old-fashioned shells often served merely to cover the all but unfathomable technology within. No need to consult the media oracles anymore for prognostications on the outcome of the digital revolution. CES gave ample proof that the fighting is over, and the guys in white socks won.

That's not to say that everything about the future has already been decided. This show saw the first significant attempts to completely reshape how we access entertainment at home. While many of the traditional A/V companies will continue to support the idea that you should own physical copies of the music you listen to and the movies you watch with good reason, since there's good money to be made selling CD and DVD hardware — the computer guys want to move beyond discs to ephemeral media, whisked into your home via broadband connections to reside on a hard drive or in some flash-memory device (see "When Worlds Collide," page 108). And considering the resources being committed to



SONY eVilla



he computer companies realized a few years ago that a lot of people want to check out the Internet, but they're either complete computerphobes or can't be bothered with all of the maintenance and protocols that come with using a full-fledged personal computer. The first product aimed at this group, WebTV, has had some success, but Internet appliances — bare-bones computers (sometimes little more than a small screen and keyboard) dedicated solely to Net access — have hardly made a ripple. Enter the eVilla. Backed by Sony's brand name and marketing muscle, this Net appliance just might be able to go where the computer guys haven't. (For more on eVilla and other Net appliances, see page 114.) Featuring an unusual 15-inch portrait-mode monitor based on Sony's Wega TVs, the eVilla is meant to give family members quick and easy access to the Internet. And, like the convergence-for-the-masses PlayStation 2, it's priced to

move at \$500. (Internet access, on the other hand, will cost you \$22 a month.)

Harman Kardon

DCM 100



emember the good old days when DVD players just played movies and CDs? With a decent number of DVD-Audio/Video and Nuon-enhanced players on display, and with the DVD-playing Xbox hogging the spotlight, CES made it clear that those days are gone. Maybe the most dramatic example of the DVD player as Swiss Army knife was Harman Kardon's DMC 100 Digital Media Center (\$900), which not only does all the DVD-Video basics but throws in a 30-gigabyte hard drive, MP3 and Windows Media Audio playback, a remote, a wireless keyboard, and Net access as well — the last courtesy of the \$9.95-amonth ZapMedia Service. (The DMC 100 is due in stores this spring.)



promote gateway devices and services like ZapMedia, Microsoft's Xbox and UltimateTV (page 85), and the interactive digital cable

receiver from Sony and Cablevision, it's clear the digital overlords are about to put their plan into action.

All DVD, All the Time

Not that disc media are going away anytime soon - as DVD's spectacular success continues to show. Player sales beat even the most optimistic projections last year, and their prices in general — and the prices of progressive-scan, Nuon-enhanced, and DVD-Audio players in particular - have dropped dramatically. As industry leaders pointed out at the DVD Entertainment Group's reception, there are likely to be at least 30 models of DVD-Audio/Video players available by summer - an indication that DVD-Audio could soon trickle down into most new DVD players at every price.

Given all the good news about DVD, you would have expected DVD recorders to be one of the highlights of the show. But there weren't any new models on view, and it

looks like prices, for the moment, will stay where they've been - high. Also disappointing was the lack of any solid news concerning efforts to avert war between the competing DVD recording formats. With the Pioneer DVD-RW and the Panasonic DVD-RAM recorders already available, and a DVD+RW deck due from Philips late this summer, it appears that the manufacturers think it's too late to consolidate the formats into a single standard. Seem-

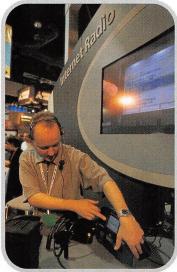
ingly unconcerned about possible consumer confusion, some of the companies sup-

porting the DVD-RW and DVD+RW formats have said that they might develop decks that can record and play both formats. (While Sony displayed a prototype DVD-RW/+RW recorder at the show, the first models won't appear until summer 2002 at the earliest.)

Meanwhile, the DVD Forum has floated the idea of creating DVD Multi decks that can handle both DVD-RW and DVD-RAM discs. But there has been no talk, at least on the record, of creating a "universal" deck capable of recording and playing all three formats — all of which, of course, begs the question of why we even need three similar formats. It now looks like the electronics giants are willing to let the marketplace decide that.

In any case, Pioneer and Compaq have already made DVD recording seem old hat with a PC that lets you record and edit video, and then author your own





DVDs for a surprisingly low \$2,300 (see page 114). And both Pioneer and Sony showed prototypes of high-definition DVD recorders using the DVR-Blue technology that the two companies developed in conjunction with Philips (see page 87). Supporters say that these high-def recorders could be available within a few years, Hollywood permitting.

DTV Doldrums

The biggest HDTV news at CES concerned not TVs but tuners.

With Toshiba, Panasonic, Mitsubishi, and Princeton Graphics now offering stand-alone high-def tuners, the selection of boxes is finally beginning to expand beyond the few that have had the market to themselves for the past year. While Princeton Graphics' HDT-2000 is devoted to over-the-air broadcasts, the Panasonic, Mitsubishi, and Toshiba tuners can bring in both DirecTV satellite and over-the-air signals. Similar models are due later this year from Sony and Hughes. (See "HDTV Tuners," page 93, for a complete list of available models.)

The convictions of HDTV supporters were sorely tested by what they saw at CES. While there was some effort to further lower the entry price for high-definition sets — the most dramatic example being a \$2,000 47-inch widescreen monitor that Panasonic hopes to have available by early summer — few new models were introduced. The TV manufacturers seem to be waiting to see what the broadcasters and cable companies do next before they up their commitment.

There is some concern that, despite their early promises to Congress and the FCC to transmit in high-def, the broadcasters will decide to split their DTV channel allotments into multiple standard-definition digital channels instead. Meanwhile, the FCC has decided not to require the cable companies to carry such split signals. And it doesn't help that the cable industry, at Hollywood's request, plans to put the tools in place that would allow for draconian restrictions on copying high-def broadcasts (see "Random Play," page 18). Whether all of this is just the biggest bump on the road to HDTV, or the beginning of a turn toward standard-definition TV (SDTV), remains to be seen.

The HDTV jitters didn't seem to be having an impact on prominent high-end companies like Runco and Faroudja. Runco showed the biggest digital light processing (DLP) rear-projection TV yet — a 72-inch model expected to sell for \$20,000 when it becomes available this summer. Faroudja, meanwhile, showed a \$4,000 digital video processor. That's still a big chunk of change, but a considerable drop from the \$20,000 tag previous Faroudja boxes have carried.

Zenith took an unusual tack toward getting DTV prices down by announcing a 27-inch 4:3 direct-view SDTV with integrated tuner that it expects to introduce later this year for less

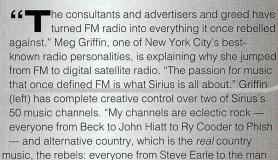
Ultimate TV



hink of it as WebTV meets TiVo. Microsoft's UltimateTV service combines DirecTV satellite service with a hard-disk video recorder and a WebTV browser to give you up to 35 hours of recording, an Advanced Programming Guide, on-the-fly instant replays, Web surfing, and interactive TV. Unlike TiVo, where you can pay the \$200 service fee up front, or ReplayTV, where the fee is included in the cost of the box, you can't use UltimateTV without a subscription - something the bubbly young woman doing the demo (left) forgot to mention. Subscriptions, which are charged in addition to the DirecTV programming

package, are \$10, \$15, and \$30 a month, depending on what features you want. DirecTV receivers with UltimateTV service will be available by midyear from RCA (\$400 with a universal remote, \$450 with the remote and a dish antenna) and Sony (\$450 with a wireless keyboard and universal remote).

Satellite Radio



in black. The best part is that we're not just broadcasting locally but bringing all of this great music to a national audience."

It's too soon to know whether the advent of the Sirius and XM Radio services will lead to a rebirth of radio, but the promise of commercial-free channels beamed 24 hours a day to anywhere in the country has to appeal to anyone who's burned out on the perpetual advertising assault that AM and FM have become. And to make sure everybody at CES knew that their technology is meant to serve the music, both services featured continuous live performances at their booths, including Bob Weir, the Smithereens, and Earth, Wind & Fire for Sirius, and Wynton Marsalis, Peter Frampton, and John Pizzarelli for XM.

Both Sirius and XM are offering 50 music channels and 50 talk, news, and business channels. All of Sirius's music channels will be commercial-free, while some of XM's will have limited commercials. Both services will cost about \$10 a month. Car receivers are expected to sell for around \$300 to \$400. Sony's plug-and-play head unit (below), which can be used in both the car and the home, will sell for \$300 in a self-installation car bundle (see "Road Gear," page 116). You'll also be able to buy adapters that plug into your existing head unit. Satellite receivers will be standard equipment in many cars — including models from Ford, GM, Chrysler, Honda, and BMW — beginning

later this year. Sirius plans to be on the air by June, while XM plans to come on line shortly after that, if everything goes okay with getting their satellites into place.





Cheap DVD

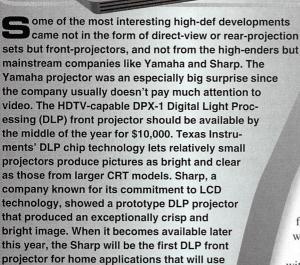
VD doesn't seem to have a downside. Everybody loves the format, the catalog of titles keeps growing, the quality of the titles keeps improving, and there's now DVD-Audio to satisfy the music fans. The best thing about DVD, though, is that it keeps getting cheaper — and a prime example was Toshiba's SD4700 DVD player (due by summer), which includes both progressive-scan output and DVD-Audio capability for \$400. A year ago, you had to pay at least \$1,000 for true progressive scan — as opposed to players that used a line doubler to mimic progressive-scan — and it was only a few months ago that the entry price for a DVD-Audio player was around one grand.

Oritron, which has been busy pushing down the prices for DVD players in general, has now set its sights on Nuon-enhanced

players. Offering sophisticated interactive and gaming features (see page 113), Nuon DVD players have been priced about \$100 more than comparable non-Nuon players, but Oritron plans to offer the DVD-900 for less than \$200.



Seeing the Digital Light



than \$1,000. The company also plans to offer a 32-inch SDTV for slightly more than \$1,000. Both sets are aimed at people who want to make the transition to digital TV but don't have the money or the space for a larger high-def model.

DVD-Audio vs. SACD — Round One

Not everything important at CES had to do with video, and if the overflow crowd for the panel discussion of surround sound was any indication, a lot of people in the A/V industry are keenly interested in the potential of multichannel music. Since DVD-Audio and Super Audio CD (SACD) offer manufacturers a big opportunity to steer people away from low-quality Internet downloads to high-quality audio, many are looking for clues as to where the new formats will go.

On the dais were legendary mastering engineer Bob Ludwig, Porno for Pyros guitarist Peter DiStefano, surround sound guru Tomlinson Holman, home theater retailer Bjorn Dybdahl, and jazz great Herbie Hancock. While the panelists all made convincing cases for the need for multichannel music, it was the demos of surround material — including a 10.2-channel remix of Hancock's *Dis Is Da Drum* — that made the biggest impression.

CES saw the official launch of DVD-Audio, but it was done so quietly you'd have thought the industry was trying to sneak it in the back door. Aside



from the DVD Entertainment Group reception, which was as much about the continuing success of DVD-Video as about the arrival of its audio kin, there was no significant effort to shine a spotlight on the new format. While the Warner Music Group, 5.1 Entertainment (featured in "5.1 in the Making," February/March issue), and Surrounded by Entertainment all used CES to reaffirm their commitment to DVD-Audio, there was nothing but silence from Universal, BMG, EMI, and Sony Music — all of which are rumored to have DVD-Audio titles ready to roll. It's still early in the launch, but some support from a major label other than format developer Warner would go a long way toward convincing people DVD-Audio has a chance.

Many have wondered how DTS, which redefined multichannel music in the '90s with its surround-encoded CDs, would respond to the new formats. The answer came in the form of DVD-Audio releases from Toy Matinee, Larisa Stow, Studio Voodoo, and Steve Stevens (see reviews, page 126).

TI's 1,280 x 720-pixel chip.

When I wrote "Introducing DVD-Audio" for our last issue, it looked like the DVD-Audio and SACD camps would simply agree to disagree, thus averting a format war. Well — no

such luck. It was obvious from Sony's press conference, where two five-disc multichannel SACD changers were announced — including a \$400 model, due this summer, aimed right at the heart of the mass market — that Sony has decided to go toe-to-toe with DVD-Audio. The company also made it clear that Sony Music and allied labels Virgin, DMP, Telarc, and Delos are doing everything possible to quickly build the catalog of multichannel SACD titles. (Virgin's first multichannel SACD release — a quadraphonic mix of Mike Oldfield's classic *Tubular Bells* — is reviewed on page 125.) To demonstrate hardware support for SACD, Sony and Philips co-hosted an event where they showed about a dozen players — mostly two-channel prototypes from high-end brands. (The first multichannel SACD player is reviewed on page 49.)

Of course, DVD-Audio, with the support of practically every major hardware company and record label, has greater resources to draw on. But neither Sony nor Philips is lacking in the firepower department, and there could even be defectors from the DVD-Audio camp, so the coming push for SACD surround sound will at least keep things interesting. (While a few companies — most notably Pioneer — showed expensive players capable of playing both DVD-Audio and SACD, there was no evidence of any big push toward "universal" players.)

Better Mousetraps

Once you got beyond the multichannel formats, the audio news from CES was less about launching new technologies than about taking old ones to new levels. Legendary audio designer Jim Fosgate, for instance, introduced a \$7,500 tube-based preamp dedicated solely to decoding Dolby Pro Logic II, a new system meant to create a convincing surround effect from ordinary CDs and other nonencoded two-channel material. DPL II, which Fosgate developed, also showed up in Kenwood's \$600 VR-510 home theater receiver, slated to reach stores this spring.

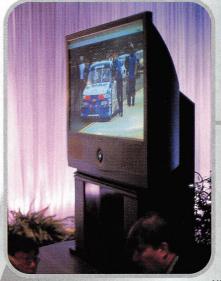
TDK, meanwhile, announced MultiLevel (ML) Recording, a technology that will allow recordable CDs to hold 2 gigabytes (GB) of information, or about three times as much as current CD-R and CD-RW discs. The company named a number of applications for ML recording, which included using tiny (8-centimeter) 200-megabyte (MB) discs, able to hold over 3 hours of MP3 recordings, in place of the expensive flash memory currently used in portable digital music players.

There were signs at the show that CD-R/RW and MP3 are on the verge of completely eclipsing Mini-

Technical editor David Ranada, a longtime Herbie Hancock fan, was surprised to find out that the legendary keyboardist is a longtime fan of *his* work.



L50000 LCOS TV



verybody wants a flat-panel TV, but the prices for plasma sets have been slow in coming down, and none of the alternative flat-panel technologies have really matured. RCA might have struck an acceptable compromise, however, with its new liquid crystal on silicon, or LCOS, technology, which allows it to create relatively light (around 100 pounds) and thin (18 inches deep) large-screen HDTVs for about the

price of a low-end plasma display. The L50000 will give you a 50-inch, appealingly slim widescreen set with a built-in HDTV tuner for over-the-air and DirecTV satellite broadcasts for somewhere between \$6,000 and \$8,000 (the final price hadn't been set at press time). The L50000, which RCA expects to have in stores by summer, will be available either as a tabletop TV or with a matching stand as shown.

Am I Blue?



n last year's CES report, we showed Pioneer's prototype high-definition DVD player. This year, both Pioneer and Sony upped the ante by showing recorders based on DVR-Blue technology, which uses a blue-violet laser to fit about 2½ hours of high-definition video onto a 22.5-gigabyte

DVD. The first recorders could be available within a few years, but you don't have to be Kreskin to figure out what might keep them from making their way into your living room — copy paranoia. Considering how the record labels squashed Digital Audio Tape and the movie studios slowed the

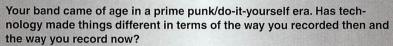
introduction of progressive-scan DVD players and HDTV, and have throttled digital VCRs, it will be interesting to see if these recorders can survive the Hollywood gauntlet.



Still Got the Beat

10 minutes (more or less) with the Go-Gos

The on-again, off-again all-female L.A. fivesome are definitely on again, as evidenced by an energetic hour-long set at a private party held by JVC at CES. The Go-Gos' punky fire fueled '80s classics like "We Got the Beat," "Our Lips Are Sealed," "Head over Heels," and "Cool Jerk" as well as a trio of new offerings from their first full-length album of all-new material in 17 years, due out in May on Beyond. (The new album, they insisted — other reports to the contrary — was still untitled at press time.) Earlier in the day, singer Belinda Carlisle and bassist Kathy Valentine (pictured at right, with Jane Wiedlin at far right) took a mini-vacation from the bustling show floor and stole away to a private room atop the JVC booth for our exclusive, if brief, rendezvous.



BELINDA CARLISLE: Back then, things like Pro Tools didn't exist. I don't know a whole lot about it, but it does make things easier. Nowadays, it seems like you don't even need to have any talent to make a record.

Does the Internet affect you, what with music downloads and MP3s getting out to the public perhaps before they should?

KATHY VALENTINE: I don't think it hurts. I've always been into fans doing whatever they want. They're going to do what they want to do anyway. People have been recording shows and taking pictures and then selling them in stores on Hollywood Blvd. for years — that's just always going to go on. But I don't think it takes away from the actual album sales.

Do you have any fears that your new album might "sneak out" over the Net before it's officially released?

BELINDA: On this last tour, we played three new songs that somehow ended up on the Web. And I'm sure the next three new songs we do live will show up somewhere, too. Like Kathy said, that's just the way it is.

KATHY: If you're a fan or a collector, you want everything anyway. You'll buy the CD to get the booklet and the pictures.

BELINDA: Exactly.

Do you have any home theater equipment?

KATHY: Well, I just bought my first new TV since 1981. [both laugh]

Wow. Did you at least get one with color this time?

KATHY: Hey, my old RCA was color. It was great and lasted a long time. Now I've got a big flat-screen TV, and I love it. [pause] What, you want to know more? I have everything — DVD, MiniDisc, everything.

BELINDA: I don't think I'll ever get DVD, though.

How come?

BELINDA: Because I have a ton of videotapes — and I still have Beta, too. [both look at each other and laugh]

You know, you could just sell them all on eBay.
BELINDA: I'm in the Dark Ages when it comes to that.







Disc. The two most dramatic pieces of evidence were Aiwa's decision to drop MD from its minisystems and Sony's introduction of its first portable and stand-alone CD-R/RW recorders. But that didn't stop Sony from announcing that it had developed a Long Time Play mode for its new MD recorders. The new mode uses the ATRAC3 data-compression encoding the company had developed for Internet downloading to allow up to 5 hours of material to be recorded onto a standard MD. The resulting discs will only play on the new decks, however.

MiniDisc's biggest advantage over CD recording has always been its flexibility — it's much easier to shuffle tracks around, drop in new tracks, and otherwise edit and manipulate recordings. In an effort to bring that kind of ease and flexibility to CD recording, Yamaha is introducing a recorder — the CDR-HD100 — that combines a 10x CD drive with a 20-GB hard drive. After manipulating the material to your heart's content on

the hard drive, you simply burn it to a CD for playback on other devices. Yamaha expects to have the \$1,000 deck in stores by July.

Soft Spots

This year saw not only an increase in exhibitors, with most of the new ones hawking computer, wireless, networking, and multimedia wares, but also the arrival of the Video Software Dealers Association (VSDA), which changed

the date of its convention to coincide with CES. The contrast between the two shows couldn't have been more stark. While the CES show floor was teeming, the traffic on the VSDA floor at the nearby Sands Convention Center was so sparse —

Clockwise from top: Attorney F. Lee Bailey greets
James Brown after Brown's Monster Cable performance;
Mötley Crüe's Nikki Sixx showed up at the JVC booth;
New York Mets catcher Mike Piazza signed autographs at
the Krell booth; the Grateful Dead's Bob Weir performed
for Sirius; and David Crosby performed for DataPlay.



at least on the day we were there — that exhibitors were visiting each other's booths while 15 or so show attendees stood in line to get an autograph from actor Jon Cryer (*The Pompatus of Love*, *Hot Shots!*).

There was some anticipation going into the show that the VSDA vendors would be pushing interactive, Web-friendly, and otherwise enhanced discs to go with the Nuon, PS2, and Xbox players on display at CES, but the discs were nowhere to be seen. They were in evidence, however, at the more heavily attended Adult Entertainment eXpo show that occupied the other half of the Sands, where companies like Vivid Entertainment featured elaborate "fantasy" DVDs and outlined its plans for delivering adult content via broadband (no jokes, please). The Hollywood studios pretty much wrote the book on flash and glitter, but it appears they could afford to take a few cues from their eXpo buddies down the hall.

Tomorrow Today

The big event of 2001 will likely be the coming show-down between Xbox and PS2 as Sony and Microsoft duke it out for home-entertainment domination. But that was far from the only major story to come out of this year's show. CES posed more questions than it answered — which is actually a good thing, since it suggests that you can expect the home-entertainment industry to continue to be innovative and vital.

Which will be the big format war of the year: SACD vs. DVD-Audio, or DVD-RW vs. DVD-RAM vs. DVD+RW? And how will Sony fare as it takes on the DVD-Audio forces on one front while

battling Microsoft on the other? Will DVD-Audio and SACD, and the arrival of digital radio, usher in a return to dedicated music listening? Or will MP3 and Internet radio be the technologies of choice, favoring access and convenience over quality? Will wireless networks be the next big thing? (The hype from a lot of exhibitors — especially at the Bluetooth booths — would lead you to believe so, even if they had few actual products to back it up.) Will HDTV be able to hang in there and establish itself once and for

all, or will the broadcasters succeed in splintering it into multiple standard-definition channels? And isn't it enough that Bill Gates is the richest guy ever? Does he have to be our friend, too?



Speaker Gallery

ome theater speakers have been the one corner of the A/V world untouched by convergence, but there were signs at CES that is about to change. The ascendence of MP3 and versatile, DVD-capable gaming systems like PlayStation 2 and Xbox,

and the growing popularity of home theater, have led to surround sound systems being set up in unusual and smaller spaces. Designers have responded with

speakers that can generate a big sound from unusual and smaller boxes — or sometimes no box at all. A case in point is the Techno Sound speaker from German manufacturer Glas Platz (left), which uses an exciter element developed by NXT to create sound from a sheet of glass. The speakers, which hang from thin wires that also transmit the signal, have the potential to blend invisibly into a room without the elaborate installation problems that come with in-wall speakers.

Also using NXT technology are TDK's multimedia Tremor speakers (top), which have flat panels instead of traditional cone drivers. The two-satellites-and-a-subwoofer Tremor line, due out in spring, will come in three flavors: the S-150 (\$150), the S-80 (\$110), and the S-60 (\$70).

More traditional in its technology, but no less useful in a small space, are Definitive Technology's PowerMonitor speakers, which adapt the company's signature gloss-black end caps and wraparound grilles to a bookshelf model with built-in powered woofers (from left to right, the PM 700, \$600 each; the 900, \$800 each; and the 500, \$425 each). The company is aiming the Power Monitors at anyone with an apartment or a small home who still wants the big, bass-rich sound DVD movies demand.

Monsoon made a name for itself by adapting to desktop multimedia systems the planar-magnetic

technology that audiophile companies like Magnepan have used for fullsize speakers. The company has now gone the other way, introducing a line of living room-friendly home theater speakers, including (from left

below) the FPF-600 (\$600), FPF-1600 (\$1,600), and FPF-1000 (\$1,000). All use planar-magnetic tweeters and midrange drivers, complemented by woofer cones for the bass. Monsoon plans to have them in stores by spring.





The perfect 'point source' has been sought for over 50 years.

KEF patented it.





 $\underset{S \cdot E \cdot R \cdot I \cdot E \cdot S}{MONITOR}$

The acoustic 'point source' has long been the Holy Grail of loudspeaker design. Ever since the early days of high fidelity, audio engineers have sought this elusive ideal.

sought this elusive ideal. Some have come close, but none have succeeded.

Except for KEF - and KEF alone. UK patent 2 236929 and US patent 5,548,657 are the proof.

KEF's revolutionary
Uni-Q® drive unit configuration is
acknowledged as one of the great
breakthroughs of modern high-end
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The single coincident point source is achieved by placing the tweeter at the exact acoustic centre of the midrange cone. With identical directivity and dispersion characteristics, this unique configuration creates an immaculate stereo image over a far wider listening area than is possible with any conventional speaker.

To the listener, the difference is phenomenal.

Off-axis response is superb - and undesirable crossover effects are virtually eliminated.

Progressively refined by Reference Series engineers, KEF's patented Uni-Q technology is what makes the

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After more than 50 years the perfect point source has arrived.







How to Buy an HDTV by Al Griffin

er, and some major pitfalls to avoid, we've prepared this guide to help you master the HDTV shopping experience.

ou've heard about it, read about it, and maybe even seen it once or twice in your local electronics megastore. Digital television (DTV) - and especially high-resolution, high-definition TV (HDTV) — is the best thing to happen to TV since the Twilight Zone. Maybe you originally had a wait-and-see attitude toward the new TV system, but now that NYPD Blue and The Sopranos are being shown in high-def, you're ready to pull out the plastic and take the plunge. Still, you can't shake the feeling that you might be steered wrong. Three, four, or four grand is a lot to spend, and you don't want some silver-tongued salesman pushing you toward a TV that doesn't meet your needs. Since there are plenty of details to consid-

The Basics

You'll want to make sure you've got the DTV basics down cold before you head to the store. Unlike the old analog NTSC system, where everyone was required to broadcast the same kind of signal, DTV allows broadcasters to choose from a whole suite of picture formats. Except for the group of widescreen HDTV formats, most DTV formats have few practical differences on the viewer end. But the high-def formats deliver such an amazing degree of picture detail that they've been compared favorably with 35mm film. And HDTV's widescreen 16:9 aspect ratio lets the images engage both your direct (head-on) and peripheral vision, which makes watching TV more involving - more like going to the movies.

Most broadcasters and other program providers have adopted the 1080i (interlaced) high-def format, where each video frame contains 1,080 "active" horizontal scan lines (counting from top to bottom of the frame) displayed in two alternating fields of 540 lines each. Standard NTSC video also uses this interlacing technique, but there you have only 480 active scan lines per frame, or less than half as many as in 1080i HDTV. The other high-def format in use, 720p (progressive-scan), has 720 scan lines presented sequentially in a single frame, the way computer monitors display images. The picture quality is as

Tune In, Turn On

f you decide to go with an HDTV monitor instead of an HDTV that has an integrated tuner, there are two types of outboard HDTV tuners to choose between: those that pull in both over-the-air (terrestrial) broadcasts and satellite signals, and those that receive over-the-air broadcasts only. At the moment, there are no official "cable-compatible" HDTV tuners, but any tuner should be able to decode the high-def programs carried by your cable company provided they were encoded using the same transmission technology used by over-theair broadcasters. No guarantees here!

Oddly enough, HDTV tuners that pull in only over-the-air signals tend to be more expensive than their satellite-receiving counterparts. If you decide to go this route, make sure your tuner has some sort of antenna signal-strength meter. This will make adjusting your antenna for optimal reception much quicker and easier than relying on trial and error alone.

A number of manufacturers offer tuners, ranging from \$549 to \$999, that receive both standard and high-def transmissions from the DirecTV satellite service plus over-the-air standard and high-def broadcasts from TV stations. The key differences between models can be found in the back-panel connectors and the type of signal formats they pass on to HDTV monitors. RCA's DTC100 (\$549), for

example, provides only a VGA output, while models from Panasonic, Mitsubishi, and other manufacturers feature component-video connectors. Panasonic's TU-HDS20 (\$1,100) is the only DirecTV/HDTV tuner that handles native 720p-format signals in addition to 1080i signals, thus bypassing a processing step that could affect image quality.

If you subscribe to EchoStar's Dish Network, your only DTV option is EchoStar's own Model 6000 receiver (\$499), which decodes both standard and high-definition digital satellite signals. A plug-in option (\$100) upgrades the Model 6000 so it can pull in both standard and digital over-theair broadcasts as well. At a total cost of \$599, the EchoStar box is a bargain, but the tuner module will function only if you activate the receiver with a subscription to the Dish Network service.

Whether you plan to receive HDTV signals with a rooftop antenna, a satellite dish, or both, gear exists to accommodate your needs. Since the cable industry hasn't yet finalized technical specifications for cable-compatible HDTV tuners, you should plan on waiting a while before adding a tuner to your HDTV monitor if you rely primarily on cable for your TV shows. In the meantime, call your cable company and encourage it to get with the HDTV program. — A.G.

good as 1080i, because while the total number of active scan lines is lower, more of them are on the screen at any given moment. So far, only ABC-owned stations are broadcasting this format.

At the low end of the DTV hierarchy are picture formats whose resolution is about the same as good NTSC broadcasts or DVDs. They include 480i and 480p, the latter format adopted by the Fox network. Both can offer images in either a standard 4:3 or a widescreen 16:9 aspect ratio. In principle, 480p should look better than 480i, but it depends on the original source signal and what's been done to it before it reaches your set.

The number of stations broadcasting HDTV and the amount of high-def programming they offer are still limited, but that's changing as more networks upgrade to meet the Federal Communications Commission's conversion timetable (see "DTV Report Card," February/March issue). Since HDTV is also being carried on

satellite by DirecTV and Dish Network as well as on a few cable services around the country, you can get at least some HDTV programming no matter where you live.

Staking Your Ground

The first question any salesman is likely to ask is how much you want to spend, so make sure you set a realistic budget before you begin your HDTV expedition. While you can buy a big-screen analog TV for \$2,000 or less, HDTVs remain big-ticket items. Prices have dropped over the past year, and will continue to go down, but an HDTV with tuner will still run between \$3,000 and \$5,000 for the smaller (40- to 55-inch) screen sizes and up to around \$10,000 for the largest sets. You can pay even more for models that have special features or use exotic display technologies.

Next, consider how much space you have for the new set in your living room or home theater. With analog TVs, blowing images up to a large size isn't necessarily a

good thing because of the way interlacing works. Since only half the scan lines in an interlaced frame are drawn across the screen at a time, the gaps between the lines in a 480-line NTSC image become visible when you sit close to the screen. The larger an analog TV's screen, the farther away from it you have to sit.

That's much less of an issue with HDTV. Even with 1080i images, you can sit fairly close to the screen. With more than twice as many scan lines as an NTSC image, the gaps in the interlacing lines aren't noticeable. And a 720p progressive-scan image displayed on a 720p-capable TV (that is, without any scan conversion) won't have line gaps at all. Now that you can get HDTVs with screen sizes up to 73 inches (diagonal), total room size is likely to be less of a problem than finding enough space within the room for the TV itself!

If you want to receive both satellite and broadcast TV signals, you'll need a dish antenna that has a clear line of sight to the south to lock onto the satellites used by DirecTV and Dish Network (which orbit over the equator); tall buildings and trees can interfere with signal reception. If you're not sure, most satellite-TV installers will come out to your home and do a site survey.

Narrowing the Field

To save time, it's a good idea to decide what type of TV you want before you head for the store. The two most common types of analog TVs are direct-view and rearprojection, and the same goes for HDTVs. Direct-view TVs use a single cathode-ray tube (CRT) to display a picture, scanning the image through a perforated metal "shadow mask" onto light-emitting phosphors coating the glass tube's front surface. There are limits to how big a picture tube can be without becoming too fragile, and the larger sets generally range in size from 32 to 38 inches (measured diagonally). In the past, direct-view tubes had slightly curved front ends, but the tubes used in many of the new HDTV models are flat right to the edges of the screen. This helps eliminate glare from lamps and undraped windows and reduces geometric distortion around the edges of the image.

A rear-projection TV (RPTV) uses three small CRTs to project the red, green, and blue color components of a video signal onto a mirror that reflects the image onto a screen mounted on the face of the set. RPTVs can be much larger than directview sets, with screen sizes ranging from 40 inches (diagonal) all the way to 73 inch-

HDTV Tuners

MANUFACTURER	Model	Price ¹	Туре	Component- video output	RGB+HV output	VGA outputs	Output formats	Additional features/notes
EchoStar (Dish Network) 300-333-3474 www.dishnetwork.com	Model 6000	\$499 (see notes)	satellite (Dish Network); terrestrial optional	•	-	•	1080i, 720p, 480i	Terrestrial tuner is a \$100 option; infrared blaster; UHF/infrared remote; caller ID
Mitsubishi 300-332-2119 www.mitsubishi-tv.com	SR-HD400	\$799	satellite (DirecTV); terrestrial		<u> </u>		1080i, 480i	NTSC tuner; advanced program guide upconverts all 480i to 1080i
Panasonic 201-348-7000 www.panasonic.com	TU-HDS20	\$1,100	satellite (DirecTV); terrestrial	•	,	-	1080i, 720p, 480p, 480i	All-format video connector; DirecTV advanced program guide
Pioneer 800-746-6337	SHD-505	\$2,500	terrestrial	•	~	_	1080i, 720p, 480p, 480i	
www.pioneerelectronics.com	SHD-09	\$2,500	terrestrial	(see notes)	1-	-	1080i, 480p, 480i	Plug-in module for Pioneer Elite projection TVs
Princeton Graphics 800-747-6249 www.princetongraphics.com	HDT-2000	\$900	terrestrial	•	•	•	1080i, 480i	RS-232 port; composite- and S-video inputs
RCA/ProScan 317-587-4450 www.rca.com	DTC100	\$549	satellite, (DirecTV), terrestrial	V	<u>-</u>	•	1080i, 540p, 480i	
	PSHD105	\$549	satellite (DirecTV), terrestrial	•	Ī	•	1080i, 540p, 480i	
Samsung 800-726-7864 www.samsungusa.com	SIR-T150	\$699	terrestrial	•	-	-	1080i, 720p, 480p, 480i	
Sensory Science 480-998-3400 www.sensoryscience.com	HDT100	\$1,600	satellite (DirecTV); terrestrial	V	•	•	1080i, 720p, 480p, 480i	RS-232 port; composite- and S-video inputs; upconverts all signals to 480p, 720p, or 1080i; lack of cooling fan reduces noise
Sony 800-222-7669 www.sel.sony.com	SAT-HD100	\$799	satellite (DirecTV); terrestrial	•		•	1080i, 480i	Integrated guide (DirecTV and DirecT HD, terrestrial NTSC and terrestrial HD, cable); upconverts all 480i to 1080i
Toshiba 800-631-3811 www.toshiba.com	DST3000	\$999	satellite (DirecTV)	•	_	•	1080i, 480i	NTSC tuner; infrared blaster port for VCR control; RF remote port; Wordfinder search; onscreen caller IC advanced DirecTV guide; aspect-ratic control; backlit universal remote

es. The larger models take up lots of floor space, but some of the smaller ones will fit in an A/V cabinet or on a table.

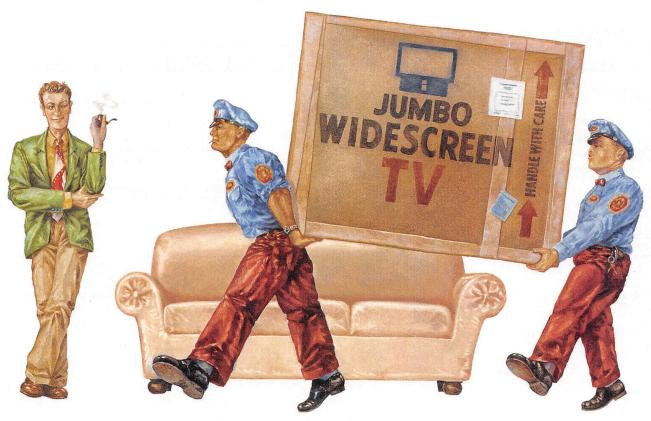
A direct-view set can do a good job of displaying HDTV, but the relatively coarse pitch of the "stripes" cut into the metal shadow mask as well as the pitch between the phosphor "dots" limits image resolution. To display a 1080i-format HDTV signal at full resolution, a direct-view tube would require a pitch fine enough to display all of the 1,920 pixels contained in each horizontal line. A pitch that fine would severely restrict the TV's light output, which is why many direct-view picture tubes resolve only around 800 pixels per line. Resolution questions aside, direct-view sets can deliver a bright, crisp-looking picture, and their comparatively small size makes them a natural choice for small spaces.

On the whole, RPTVs deliver more detailed and dramatic HDTV images than direct-view models, particularly larger sets that use 9-inch CRTs instead of the more common 7-inch tubes. But before settling on an RPTV, you should take into account that most of the programs you'll be watching for the next few years are likely to be in the standard NTSC format, so the RPTV edge may not be immediately evident. On the other hand, virtually all HDTVs incorporate circuitry that multiplies the number of scan lines in an NTSC video signal, thus increasing its apparent resolution. The quality of these "upconverted" images pales next to real HDTV, however, and varies greatly from set to set.

Two more HDTV alternatives are front projectors and those sleek, flat-panel plasma TVs we all love and wish we could afford. A front projector is usually mounted on the ceiling, where it beams the images onto a large screen. Besides the well-established CRT and LCD front-projection technologies, there are high-tech newcomers like Texas Instruments' Digital Light Processing (DLP) and Digital Image Light Amplification (D-ILA) from Hughes/JVC. Both DLP and D-ILA generate images using integrated circuits, or "chips," covered with an array of tiny fixed pixels - pivoting microscopic mirrors in the case of DLP and reflective liquid-crystal cells for LCD.

Plasma displays are large (usually 42- to 50-inch) panels that are only 3 to 4 inches deep, so you can wall-mount them like a picture frame. Both front projectors and plasma sets can do an excellent job of displaying HDTV images, but they cost a good deal more on average than directview sets and RPTVs.

Since manufacturers make HDTV sets in both standard 4:3 and widescreen 16:9 aspect ratios, you need to seriously consider what kinds of programs you like to watch before deciding which way to go. The HDTV standard calls for movie theater-like widescreen images, so you'd think a 16:9 screen would be the natural choice,



but it isn't that simple. Whether delivered by broadcast, cable, or satellite TV, most programs are still shown in the squarish 4:3 format and will be for years to come. But more and more TV shows are being broadcast in widescreen, and eventually most will be. So you need to decide whether your priorities are short-term or long-term.

With standard programming, a wide-screen TV has to either stretch the image to fill the screen or position it in the center, flanked by black or gray bars. On the other hand, most sets with a standard 4:3 screen show high-def images in a letterboxed format, with black bars at the top and bottom of the screen. Letterboxing does give you the benefit of widescreen presentation by displaying correctly proportioned images with nothing arbitrarily cropped out, but the visual impact is diminished because the full screen area isn't being used to deliver picture information.

Getting Connected

Maybe the most important decision you'll have to make is whether to buy an all-inone HDTV, which has a built-in tuner to receive both over-the-air digital broadcasts and standard transmissions, or an HDTV monitor, which requires an external HDTV tuner to receive high-def broadcasts. (Most HDTV monitors do include an NTSC tuner to receive analog broadcast and cable signals, however.) At this stage in the game, buying an HDTV monitor may be the way to go. You'll save some money in the short term, and you can always add an HDTV

tuner later when more digital broadcasts are available. And you won't be left out in the cold if the high-def standards for cable turn out to be incompatible with current tuners, which seems likely.

Because both HDTVs and HDTV monitors offer a wide range of connection options, have the salesman explain the jacks provided on each of the sets you're considering. In addition to the standard RF, composite-video, and S-video jacks, you'll encounter less familiar types, such as component-video, VGA, and RGB+H/V (red, green, and blue plus separate horizontal and vertical sync). All of these connectors allow you to hook up a number of devices to your TV, from an HDTV tuner to a progressive-scan DVD player to a computer.

If you're leaning toward an HDTV monitor, make sure the input jacks match the output jacks on your tuner. Most HDTV tuners have a component-video output, which is a set of three RCA jacks. Many sets with component-video *inputs*, however, also have RGB+H/V jacks. Some HDTV monitors also use the VGA interface. Right now, RCA's DTC100 is the only HDTV tuner that relies solely on VGA, though RCA sells an adapter for connecting the DTC100 to TVs with component-video inputs.

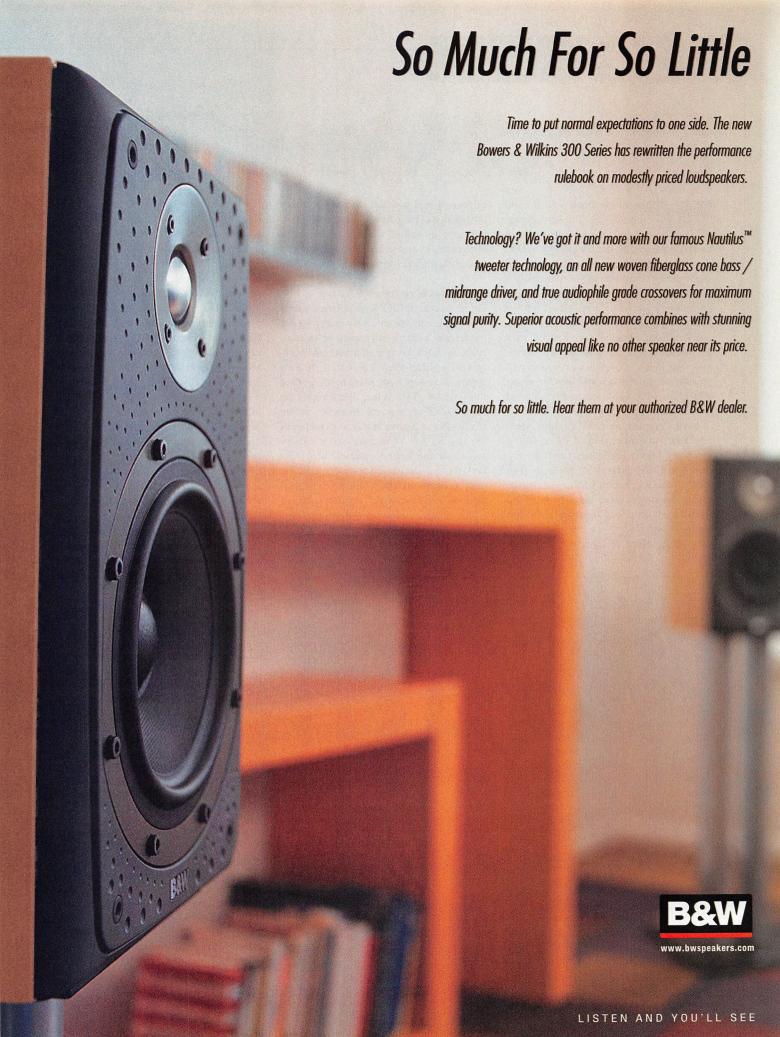
If you plan to upgrade to a progressivescan DVD player anytime soon, look for an HDTV or monitor with two sets of wideband component-video inputs. While standard component-video jacks accept only NTSC-format signals from standard DVD players, a wideband component input can handle signals in several formats, including a progressive-scan DVD player's 480p output and the 480p, 720p, or 1080i output of HDTV tuners.

The Real Deal

A while back, I went to an electronics superstore to buy a WebTV box for my computerphobic parents. Walking down the aisles, my eyes were drawn to a row of HDTV monitors — which, to my surprise, weren't showing HDTV but a DVD. Both the player and the TVs were set up so badly that the actors' bodies were squat and scrunched, with their heads lopped off about mid-mouth! I couldn't help wondering if this was part of some conspiracy to drive customers away from HDTV.

If you're serious about going the HDTV route, make sure you watch some high-definition programming on a properly set up monitor. If your local electronics store can't fill that order, go someplace that can. Smaller specialty A/V shops generally do a better job of turning people on to HDTV than the large chains.

HDTV can be expensive compared with good old standard TV, but if you shop wisely and set up your system correctly (see "The Setup" in the November 2000 issue), you'll be thrilled at the difference it makes. If you've taught yourself the basics and thought through your options before you head to the store, everything should snap into place, and you'll find yourself well on your way to participating in the exciting world of high-definition TV.



Direct-View TVs

hen home theater was new, choosing the TV was among the easiest decisions you had to make. Almost all the complexity was in the audio gear. Now there seems to be some sort of contest on to see who can jam the most functions into a TV set. You know something's up when people start talking about selling digital televisions with wireless keyboards. I'm not sure I really want to interact that much with my TV, thank you, but that's a question everyone will have to answer for himself. Just be aware that it's a wild, wild, increasingly digital world out there.

In that context, an ordinary direct-view television set built around a CRT (cathoderay tube) display might seem a bit dowdy. This venerable technology holds its own nicely, however, in part because of its maturity. Engineers have been working on CRT design for a long time, and the effort shows. Good direct-view sets can deliver very sharp, clean pictures with excellent

brightness and contrast. Just about every other video display technology is still playing catch-up to CRTs in one performance characteristic or another. The only serious limitation of direct-view sets is screen size.

Screen Size and Shape

By its nature, a CRT with a large screen area is big, clumsy, and very heavy — not to mention difficult and expensive to manufacture. A few years ago, Mitsubishi briefly sold a direct-view TV with a 40-inch screen, a concept Sony plans to revive later this year for its Wega line. But for now the largest CRT screens are 36 inches in the old familiar 4:3 aspect ratio or 38 inches in the newer 16:9 widescreen shape. These are about the largest practical sizes. So how do you decide on the right size for you? (The listings that follow begin with 30-inch models, which is the smallest

screen size you'd want for serious home theater viewing.) And how do you decide whether you really need another type of set that can deliver a larger image?

Before answering those questions, let's consider aspect ratio, or the ratio of a screen's width to its height. Traditionally, TV screens have had a 4:3 aspect ratio, meaning that for every 4 inches of width there are 3 inches of height. This shape is derived from the old Academy standard for motion pictures, which held sway until the early 1950s. But now we're in transition to a new digital television (DTV) system that allows programs to be shot and transmitted in a widescreen 16:9 aspect ratio. Sets with 16:9 screens match the human visual field much better - and, not coincidentally, the widescreen formats used for contemporary movies. In addition, many DVD releases are mastered to provide higher resolution on 16:9 screens.

So if you're the type who likes to keep pace with new technology, a 16:9 screen is

by MICHAEL RIGGS



a good way to go. There are a couple of other issues to consider, however. First is price: A 16:9 CRT costs quite a bit more to produce than a 4:3 picture tube, which is reflected in the prices of finished sets. Second is size: When you compare a 34-inch 16:9 screen with a 34-inch 4:3 screen, it's true that the 16:9 screen will be wider, but since TV screen size is measured *diagonally*, it will be shorter as well. In fact, a 34-inch 16:9 screen is about the same height as a conventional 27-incher!

If you want a 16:9 display, make sure you'll be satisfied with the overall size of the picture before you buy a direct-view model. Another important point to keep in mind is that when the DTV transition is completed, years in the future, most TV pictures are likely to be widescreen. But until then you're going to be watching a lot of 4:3 programming, no matter what the shape of the screen you use to display it. So the best way to decide which way to go is to visit a store and, standing about as far from the screens as you will be from your TV at home, look at both types of programming. Get a feel for what's going to make your eyes happy.

Display Types

Now that TV is going digital, there is a hierarchy of signal formats you should be

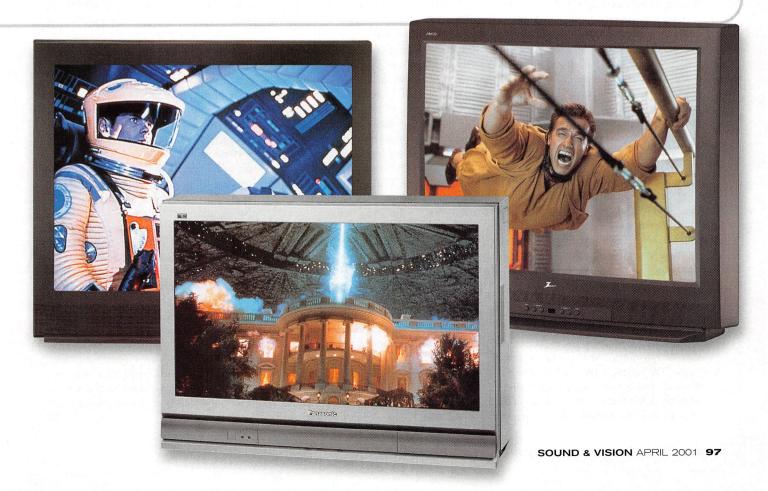
aware of. At the base is traditional analog NTSC television, which you can receive via antenna, cable, or satellite. (These signals are converted to digital before satellite transmission, and may be for cable as well, but they originate as analog.) NTSC analog is a 480i format, meaning that each video frame has 480 active scan lines, divided into two 240-line fields that are scanned sequentially. The fields are interlaced (hence the "i"), meaning that the lines of the second field of a frame are scanned between the lines of the first. A field is scanned every \(^{1}/60\) of a second, yielding 30 complete frames per second.

With the new DTV system, signals remain digital from the camera all the way up to the receiver. There are two basic categories of DTV: standard-definition television (SDTV) and high-definition television (HDTV). They differ only in resolution. SDTV signals are 480i or 480p. The "p" stands for progressive, meaning that each frame is scanned in a single pass instead of being divided into interlaced fields. Thus, 480p gives you 60 complete 480-line frames per second. That might not seem like a big deal, but progressive-scanned images look cleaner and more detailed than otherwise equivalent interlaced images, particularly when the scene contains motion. HDTV signals have a 16:9 widescreen aspect ratio and are transmitted in either a 720p or 1080i format, both of which provide significantly higher resolution than standard-definition formats.

It is important to know which of these various types of signals the TV set you buy can receive and display. Basic analog TV sets will accept only analog NTSC (480i) signals. A step up from that are enhanced-definition TV (EDTV) sets, which can accept both 480i signals and the 480p signals from a DVD player with progressive-scan outputs or from an external DTV tuner. An EDTV may also display HDTV signals, though not in the widescreen format.

At the top of the heap are true HDTV sets, which can display 720p, 1080i, or both signal formats in the 16:9 aspect ratio. Most HDTVs now have 16:9 screens, though some are 4:3 and display widescreen programs with black "letterbox" bars above and below the image. HDTV sets come in two flavors: HDTV monitors, which require an external HDTV tuner to display high-def signals, and integrated HDTVs with a tuner built in. Since HDTV monitors generally cost less, they're an ex-

Facing page, the Proton HT-34PRO, Philips 34PW9846, and Hitachi 36UX01S. Below, the Sanyo AVM-3651, Zenith C36C35T, and Panasonic CT-34WX50.



direct-view TVs

cellent option if you want to be ready for HDTV but don't want to make the full investment right away.

Native Display Formats

If you've been keeping count, you know that there are now four basic video scanning formats a TV set might have to reproduce: 480i, 480p, 720p, and 1080i. Unlike many other types of displays, a CRT can be designed to handle all these formats directly, but this is almost never done except in expensive front-projection systems. Most sets have one or two "native" scanning formats to which the others are converted electronically. An EDTV set, for example, might display all signals in the 480p format, while most HDTV sets convert 480i to 480p and 720p to 1080i.

The device responsible for this bit of magic is known as a scan converter. The simplest type doubles the number of lines in a display frame — from 480i to 480p, for example. A more flexible type of converter is called a scaler. Even basic line doubling is a far from trivial procedure, however. Done badly, any kind of line-doubling or scaling can severely impair picture quality. So look carefully at the picture on any set that performs scan conversion, using program material in a wide range of original formats. The quality of the conversion can make a huge difference.

Also, don't get too carried away by the numbers game. While 720p and 1080i are obviously superior on very large screens, the difference between either and high-quality 480p images on, say, a 34-inch 16:9 screen will be subtle at normal viewing distances. It's unlikely that any direct-view set on the market can display the full resolution of a 1080i HDTV signal anyway.

Inputs

Make a list of all the connections you'll want to make from your various video sources (DVD player, hard-disk recorder, VCR, satellite receiver, and so on) and compare it with the connections provided by the TV sets you're considering. Are there enough inputs? And are they the right types?

You should expect, at absolute minimum, one or two RF inputs for antenna and cable feeds plus a composite-video input. Composite video is how NTSC television is transmitted, along with an audio signal. The format crams all the color, luminance, and synchronization information into one signal that the TV set has to pull apart to drive the picture tube. A step up

from composite is S-video, which conveys the luminance (brightness) and chrominance (color) portions of a video signal separately. With sources in which these elements aren't combined into one signal to begin with, such as a DVD, S-video will usually give you a much better picture by eliminating the artifacts that occur when a composite signal is decoded.

Component video takes this process a small step further by keeping separate the two color-difference signals that make up the chrominance portion of an S-video signal. The digital video signals of DVD, DTV, satellite TV, and digital cable are MPEG-2-encoded component video. With these sources, a component connection eliminates still another stage of processing inside the TV set, leaving it to perform only the simple matrix operation that converts component video into the RGB (redgreen-blue) signal that ultimately drives the electron guns in the CRT. Visually, the step from S-video to component video is typically smaller than that from composite- to S-video, but it can still make a noticeable difference on some sets.

Two basic flavors of component-video input are found on most sets. The first is designed to accept 480*i* signals from DVD players with component-video outputs and is found on analog TVs and a few EDTV and HDTV sets. The second is called a wideband component-video input, and it can also handle 480*p* signals from DVD players with progressive-scan outputs and high-def signals from HDTV tuners.

You may also come across RGB+H/V and VGA inputs. The former requires five jacks — three for the components of an RGB signal and two more for the accompanying horizontal and vertical sync signals. This type of input is much more common on high-end front projectors than on direct-view sets. VGA inputs — essentially just another way of conveying an RGB signal — use 15-pin jacks designed to mate with computers and some HDTV tuners.

Comb Filters

Because of the way the NTSC television system entangles chrominance and luminance in the composite-video signal, they aren't easy to pull apart cleanly without sacrificing resolution. (That's why it's better to avoid composite video whenever possible.) In the better TV sets, this task is performed by a comb filter. Simple two-line analog comb filters handle the job in decent fashion but not flawlessly. They sometimes produce obvious artifacts, such

as dots crawling along sharp edges in a color picture. More sophisticated comb filters convert the analog video to digital and attack it via signal processing. Until recently, almost all the digital comb filters worked with just three scan lines of information at a time. Although three-line digital combs are better than their two-line analog predecessors, their performance pales against that of the latest 3-D digital comb filters, which work with entire frames of information at once. These can deliver close to S-video quality from composite signals.

Picture-in-Picture (PIP)

The ability to inset a small picture from another channel or source into the main picture you're watching and to swap back and forth between them is now almost a standard feature on all but very low-end sets. There are two types of PIP: one-tuner and two-tuner. Sets with one-tuner PIP contain only a single TV tuner and therefore rely on an external source, such as a VCR, to supply the second picture. More convenient is two-tuner PIP, which uses a second tuner in the TV itself.

Remote Controls and More

As the number of features built into TV sets multiplies, the design of the remote control becomes increasingly significant. Basic remotes operate only the TV, but high-end sets often come with "universal" or "learning" remotes that can control at least some essential functions of a number of other components as well. Multicomponent remotes are a good idea up to a point, but as a remote takes on more functions it tends to become more cluttered and confusing to use. Look for one that feels comfortable in your hand and whose buttons are both logically laid out and easily distinguished by position and feel. And if you like to watch movies in the dark, you'll find backlighting very handy.

Other convenience features abound in such profusion that it's impossible even to mention all of them here. Some sets, for example, now have built-in satellite TV receivers or DVD players. Some include virtual surround processing to simulate surround sound with just two speakers. Some also provide onscreen program guides, Internet access, or other interactive features. We've definitely entered a new era of television. But if you think your purchase through, you can go home with a set that will deliver loads of enjoyment for many years to come.

			NAME OF THE OWNER, OF THE OWNER, OF THE OWNER,				NO SERVICE SER						
Hitachi 1855 Dornoch Ct. San Diego, CA 92154 800-448-2244 www.hitachi.com/tv	36SDX01S	\$2,200	36	4:3	HDTV monitor	1080i, 480p	2/2	0/1	0	2	3-D digital	one-tuner	Wireless mouse via remote control; PC audio input; SRS virtual surround sound with BBE sound clarity enhancer; silver cabinet; built-in line doubler; universal remote
	36UX01S	\$1,200	36	4:3	analog	N/A	3/1	1/0	0	0	3-line digital	two-tuner	UltraBlack picture tube; special- event reminder; silver cabinet; backlit universal remote
	36GX01B	\$1,000	36	4:3	analog	N/A	3/1	1/0	0	0	3-line digital		UltraBlack picture tube; Energy- Star compliant; backlit universa remote
	32UX01S	\$800	32	4:3	analog	N/A	3/1	1/0	0	0	3-line digital	two-tuner	As 36UX01S
	32GX01B	\$700	32	4:3	analog	N/A	3/1	1/0	0	0	3-line digital	-	As 36GX01B
JVC	AV32F802	\$1,299	32	4:3	analog	N/A	3/2	2/0	0	0	3-D digital	two-tuner	Backlit universal remote
1700 Valley Rd. Wayne, NJ 07470	AV32F702	\$1,200	32	4:3	analog	N/A	3/2	1/0	0	0	3-line digital		As above
800-526-5308 www.jvc.com	AV36D502	\$1,100	36	4:3	analog	N/A	3/2	1/0	0	0	3-line digital	two-tuner	As above
	AV36D302	\$1,000	36	4:3	analog	N/A	3/1	1/0	0	0	3-line digital	_	As above
	AV36260	\$1,000	36	4:3	analog	N/A	3/1	1/0	0	0	3-line digital	two-tuner	As above
	AV36230	\$900	36	4:3	analog	N/A	3/1	1/0	0	0	3-line digital	_	As above
	AV32D502	\$850	32	4:3	analog	N/A	3/2	1/0	0	0	3-line digital	two-tuner	As above
	AV32260	\$800	32	4:3	analog	N/A	3/1	1/0	0	0	3-line digital	two-tuner	As above
	AV32D302	\$750	32	4:3	analog	N/A	3/1	1/0	0	0	3-line digital	_	As above
	AV32230	\$700	32	4:3	analog	N/A	3/1	1/0	0	0	3-line digital	TO THE	As above
Konka 9565 Heinrich Hertz Dr. #7	HD3498U	\$2,999	34	16:9	HDTV	1080i	2/0	0/0	0	0	3-D digital	one-tuner	Built-in 20-watt stereo speakers; learning remote
San Diego, CA 92154 619-661-6766 www.konkausa.com	SR3289U	\$1,299	32	4:3	HDTV monitor	1080i	3/1	1/0	0	1	3-D digital	one-tuner	As above
Loewe 7835 E. McClain Dr. Scottsdale, AZ 85260	Art	\$2,500	36	4:3	EDTV monitor	480p	3/4	1/1	4	1	3-line digital	two-tuner	Built-in line doubler; universal remote
877-563-9388 www.sensoryscience.com	Calida	\$2,400	32	4:3	EDTV monitor	480p	3/4	1/1	4	1	3-line digital	two-tuner	Built-in line doubler with 3:2 pulldown; universal remote
Panasonic One Panasonic Way Secaucus, NJ 07094 201-348-7000 www.panasonic.com	CT-34WX50	\$4,500	34	16:9	HDTV monitor	1080i, 480p	4/4	0/2	0	0	3-D digital	two-tuner	Built-in NTSC tuner; component-video output; virtual surround sound; built-in line doubler; backlit universal remote
	CT-36HX41	\$2,400	36	4:3	HDTV monitor	1080i, 480p	4/3	0/2	0	0	3-D digital	two-tuner	Center-channel input; channel labeling; Spatializer virtual surround sound; built-in line doubler; backlit universal remote
	CT-32HX41	\$1,900	32	4:3	HDTV monitor	1080i, 480p	4/3	0/2	0	0	3-D digital	two-tuner	Center-channel input; built-in line doubler; backlit universal remote
	CT-36SX31	\$1,700	36	4:3	analog	N/A	3/2	1/0	0	0	3-line digital	two-tuner	Flat screen; virtual surround sound; backlit universal remote
	CT-32SX31	\$1,200	32	4:3	analog	N/A	1/2	1/0	0	0	3-line digital	two-tuner	Flat screen; backlit universal remote
	CT-36D31	\$950	36	4:3	analog	N/A	3/1	1/0	0	0	3-line digital	two-tuner	Backlit universal remote
	CT-36D11	\$850	36	4:3	analog	N/A	3/1	1/0	0	0	3-line digital	_	As above
	CT-32D41	\$850	32	4:3	analog	N/A	1/1	1/0	0	0	3-line digital	two-tuner	Built-in e-mail/Internet browser wireless keyboard remote; wireless phone jack

Note: All information supplied by the manufacturers.

N/A = not applicable.

Manufacturers' quoted prices; dealer prices vary.

SD = standard-definition (digital); ED = enhanced-definition (digital); HD = high-definition (digital)

Shopping made simple

direct-view

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Panasonic	CT-32D31	\$750	32	4:3	analog	N/A	1/1	1/0	0	0	3-line digital	two-tuner	Backlit universal remote
(continued)	CT-32D11	\$650	32	4:3	analog	N/A	1/1	1/0	0	0	3-line digital	_	As above
	CT-32G6	\$550	32	4:3	analog	N/A	1/1	0/0	0	0	2-line digital	_	
Philips 64 Perimeter Center E. Atlanta, GA 30346 800-531-0039 www.philipsusa.com	34PW9846	\$4,999	34	16:9	HDTV monitor	1080i, 480p	2/3	1/1	1	0	3-line digital	two-tuner	Flat screen; package includes matching TV stand and Philips Pronto backlit universal learning remote; built-in line doubler
	34PW9815	\$3,999	34	16:9	HDTV monitor	1080i, 480p	2/3	1/1	1	0	3-line digital	two-tuner	Flat screen; built-in line double backlit universal remote
	30PW9815	\$2,999	30	16:9	HDTV monitor	1080i, 480p	2/3	1/1	1	0	3-line digital	two-tuner	As above
Princeton Graphics 2801 South Yale St. Santa Ana, CA 92704 800-747-6249	AF3.0HDS	\$4,399	30	16:9	HDTV monitor	1080i, 720p, 480p	1/1	0/2	1	1	digital	-	HDTV color-corrected phosphors; RS-232 input; built in line doubler
www.princetongraphics.	AF3.0HD	\$3,999	30	16:9	HDTV monitor	1080i, 720p, 480p	1/1	0/2	1	1	digital		MicroFilter tube with HDTV color-corrected phosphors; but in line doubler
	Al3.6HD	\$3,499	36	4:3	HDTV monitor	1080i, 720p, 480p	2/2	1/1	1	1	digital	one-tuner	Built-in Ch.1 Internet and local TV program-guide service; universal learning keyboard remote; vertical raster collapse for full-resolution display of widescreen content; RS-232 input; defeatable scan-velocity modulation; three colortemperature presets; built-in lir doubler
	AR3.6HTX	\$3,499	36	4:3	HDTV monitor	1080i, 720p, 480p	1/1	1/1	0	2	digital		VGA output; NTSC tuner; built- line doubler; universal remote
	AR3.6T	\$3,299	36	4:3	HDTV monitor	1080i, 720p, 480p	1/1	0/0	0	2	digital	-	As above
	AR3.2HTX	\$2,499	32	4:3	HDTV monitor	1080i, 720p, 480p	1/1	1/1	0	2	digital	-	As above
	AR3.2T	\$1,999	32	4:3	HDTV monitor	1080i, 720p, 480p	1/1	0/0	0	2	digital	_	VGA output; NTSC tuner; built- line doubler; universal remote
Proton 13855 Struikman Rd. Cerritos, CA 90703-1031 562-404-2222 www.proton-usa.com	MM-3601VT	\$2,500	36	4:3	HDTV monitor	1080i, 480p, 480i	2/2	0/0	2	2	3-line digital		Three color-temperature presets; defeatable scanvelocity modulation; 3.58-MHz notch filter; six-speaker audio system with 3-D Spatializer surround sound and subwoofer
	NT-3860	\$2,000	36	4:3	analog	N/A	3/3	1/0	0	0	2-line digital		Two color-temperature presets; defeatable scan-velocity modulation; video noise reduction; three-speaker audio system with subwoofer
	HT-34PRO	\$1,600	32	4:3	analog	N/A	3/3	1/0	0	0	2-line digital	_	As NT-3860
	NT-3460	\$1,300	32	4:3	analog	N/A	3/3	1/0	0	0	2-line digital	-	As above
RCA/ProScan 10330 N. Meridian ndianapolis, N 46290-1024	F38310	\$4,299	38	16:9	HDTV	1080i, 480p	4/3	0/1	0	0	3-D digital	two-tuner	Built-in DirecTV receiver; SRS virtual surround sound; optical digital audio output; built-in line doubler; backlit universal remot
817-587-4450 vww.rca.com	PS38000	\$4,299	38	16:9	HDTV	1080i, 480p	4/3	0/1	0	0	3-D digital	two-tuner	As above, with dual RF Inputs

Note: All information supplied by the manufacturers.

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MANUFACTURER	The same of	4 /	(i)		4	19	365	20,	* '	`	~	-	1,0
RCA/ProScan (continued)	PS36810	\$2,399	36	4:3	EDTV monitor	1080i, 480p, 480i	4/3	0/1	0	2	3-line digital	two-tuner	Guide+ Gold; SRS virtual surround sound; front/rear USB; backlit universal remote
	MM36110	\$2,199	36	4:3	EDTV monitor	1080i, 480p, 480i	4/3	0/1	0	2	3-line digital	two-tuner	Guide+ Gold; SRS virtual surround sound; front/rear USB; universal remote
	PS32810	\$1,999	32	4:3	EDTV monitor	1080i, 480p, 480i	4/3	0/1	0	2	3-line digital	two-tuner	As above
	MM32110	\$1,749	32	4:3	EDTV monitor	1080i, 480p, 480i	4/3	0/1	0	2	3-line digital	two-tuner	As above
	G36705	\$1,699	36	4:3	analog	N/A	2/2	0/0	0	0	3-line digital	two-tuner	Guide+ Gold; SRS virtual surround sound; universal remote
	PS36710	\$1,299	36	4:3	analog	N/A	3/2	1/0	0	0	3-line digital	two-tuner	As above, with Auto Tune; front- panel lockout; switchable audio output
	G32705	\$1,299	32	4:3	analog	N/A	2/2	0/0	0	0	3-line digital	two-tuner	As G36705
	F36715	\$1,199	36	4:3	analog	N/A	3/1	1/0	0	0	3-line digital	two-tuner	Guide+ Gold; SRS virtual surround sound; universal remote
	PS36610	\$1,199	36	4:3	analog	N/A	3/1	1/0	0	0	3-line digital	two-tuner	As PS36710, backlit remote
	F36689	\$1,099	36	4:3	analog	N/A	2/1	1/0	0	0	3-line digital	two-tuner	As G36705
	PS32610	\$949	32	4:3	analog	N/A	3/1	1/0	0	0	3-line digital	two-tuner	As PS36610
	F32715	\$899	32	4:3	analog	N/A	3/1	1/0	0	0	3-line digital	two-tuner	As F36715
	F32689	\$849	32	4:3	analog	N/A	2/1	1/0	0	0	3-line digital	two-tuner	As G36705
	F32691	\$849	32	4:3	analog	N/A	3/1	1/0	0	0	3-line digital	two-tuner	As G36705, with switchable audio output; universal remote
Sanyo 3333 Sanyo Rd. Forrest City, AR 72335	AVM-3681	\$750	36	4:3	analog	N/A	2/2	0	0	0	3-line digital	one-tuner	Switchable audio output; universal remote
800-877-5032 www.sanyoctv.com	AVM-3651	\$700	36	4:3	analog	N/A	2/2	0	0	0	3-line digital	_	As above
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	DS35510	\$650	35	4:3	analog	N/A	2/2	0	0	0	3-line digital	-	As above, backlit remote
	AVM-3280	\$500	32	4:3	analog	N/A	2/1	0	0	0	2-line digital	one-tuner	Universal remote
	PC-32S90	\$450	32	4:3	analog	N/A	2/1	0	0	0	2-line digital	_	As above
	AVM-3259	\$450	32	4:3	analog	N/A	2/1	0	0	0	2-line digital	=	As above
Sharp Sharp Plaza Mahwah, NJ 07430 877-388-7427 www.sharp-usa.com	34N-WF5H	\$4,999	34	16:9	HDTV monitor	1080i, 480p	4/3	0/2	1	0	3-D digital	two-tuner	DDFC-1080 video-enhancement circuit converts standard video to 480p or 1080i; backlit universal learning remote
Sony One Sony Dr. Park Ridge, NJ 07656	KV-36XBR400 Trinitron Wega	\$2,699	36	4:3	HDTV monitor	1080i, 480p	4/3	2/2	0	0	3-D digital	two-tuner	Flat screen; Auto 16:9 enhanced mode; built-in line doubler; universal remote
800-222-7669 www.sel.sony.com	KV-32XBR400 Trinitron Wega	\$2,199	32	4:3	HDTV monitor	1080i, 480p	4/3	2/2	0	0	3-D digital	two-tuner	As above
	KV-36FV26 Trinitron Wega	\$1,999	36	4:3	analog	N/A	3/2	1/0	0	0	3-D digital	two-tuner	Flat screen; Auto 16:9 enhance mode; universal remote
	KV-36FV16 Trinitron Wega	\$1,899	36	4:3	analog	N/A	3/2	1/0	0	0	3-D digital	two-tuner	Flat screen; 16:9 enhanced mode; universal remote
	KV-36FS16 Trinitron Wega	\$1,799	36	4:3	analog	N/A	3/1	1/0	0	0	3-line digital	two-tuner	As above
	KV-36FS12 Trinitron Wega	\$1,699	36	4:3	analog	N/A	3/1	1/0	0	0	3-line digital		As above

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SHOPPING MADE SIMPLE direct-view TVs

KV-32FV26 Trinitron Wega	\$1,599	32	4.0					100000000000000000000000000000000000000	S SVSCOSIUS CO	IN THE REPORT OF THE PARTY OF THE PARTY.	I CONTRACTOR STATE OF THE STATE	I MOTORNOS COMENCIONOS CONTRACTORAS CONTRACT
			4:3	analog	N/A	3/2	1/0	0	0	3-D digital	two-tuner	Flat screen; Auto 16:9 enhance mode; universal remote
KV-32FV16 Trinitron Wega	\$1,499	32	4:3	analog	N/A	3/2	1/0	0	0	3-D digital	two-tuner	Flat screen; 16:9 enhanced mode; universal remote
KV-32FS16 Trinitron Wega	\$1,299	32	4:3	analog	N/A	3/1	1/0	0	0	3-line digital	two-tuner	As above
KV-35S66	\$1,299	35	4:3	analog	N/A	2/1	0/0	0	0	digital	two-tuner	Universal remote
KV-32FS12 Trinitron Wega	\$1,199	32	4:3	analog	N/A	3/1	1/0	0	0	3-line digital	_	Flat screen; 16:9 enhanced mode; universal remote
KV-35S42	\$1,199	35	4:3	analog	N/A	2/1	0/0	0	0	digital	_	Universal remote
KS-32S66	\$799	32	4:3	analog	N/A	2/1	0/0	0	0	digital	two-tuner	As above
KS-32S42	\$699	32	4:3	analog	N/A	1/1	0/0	0	0	digital	-	As above
CW34X92	\$4,500	34	16:9	HDTV monitor	1080i, 480p	3/2	0/2	0	0	3-D digital	two-tuner	Flat screen; built-in line doubler backlit universal remote
36AX60	\$1,300	36	4:3	analog	N/A	3/1	1/0	0	0	3-line digital	two-tuner	Cinema Series; backlit universa remote
36A60	\$1,200	36	4:3	analog	N/A	2/1	1/0	0	0	3-line digital	two-tuner	Universal remote
36A50	\$1,100	36	4:3	analog	N/A	2/1	1/0	0	0	3-line digital	one-tuner	Universal remote
36A40	\$1,000	36	4:3	analog	N/A	2/1	1/0	0	0	3-line digital	-	Universal remote
32AX60	\$900	32	4:3	analog	N/A	3/1	1/0	0	0	3-line digital	two-tuner	As 36AX60
32A60	\$800	32	4:3	analog	N/A	2/1	1/0	0	0	3-line digital	two-tuner	Universal remote
32A50	\$750	32	4:3	analog	N/A	2/1	1/0	0	0	3-line digital	one-tuner	Universal remote
32A40	\$700	32	4:3	analog	N/A	2/1	1/0	0	0	3-line digital		Universal remote
32A30	\$600	32	4:3	analog	N/A	2/0	0/0	0	0	2-line digital		
D36D53T	\$2,300	36	4:3	HDTV monitor	1080i, 480p	3/2	0/2	0	2	3-D digital	two-tuner	Flat screen; multiscan; Guide+ Gold; source sensing; built-in line doubler; backlit unversal remote
D32D53T	\$1,800	32	4:3	HDTV monitor	1080i, 480p	3/2	0/2	0	2	3-D digital	two-tuner	As above
IQB36B44W	\$1,500	36	4:3	analog	N/A	3/3	1/0	0	0	2-line digital	two-tuner	Guide+ Gold; universal remote
IQB32B44W	\$1,500	32	4:3	analog	N/A	2/2	1/0	0	0	2-line digital	two-tuner	Guide+ Gold; universal remote
C36C41T	\$1,300	36	4:3	analog	N/A	2/2	0/0	0	0	2-line digital	two-tuner	EZ Feature package; parental control; universal remote
C36C35T	\$1,250	36	4:3	analog	N/A	2/2	0/0	0	0	2-line digital	one-tuner	As above
B36A24Z	\$1,150	36	4:3	analog	N/A	1/1	0/0	0	0	2-line analog	-	As above
C32C41T	\$1,050	32	4:3	analog	N/A	2/2	0/0	0	0	2-line digital	two-tuner	EZ Feature package; parental control; universal remote
C32C35T	\$1,000	32	4:3	analog	N/A	2/2	0/0	0	0	2-line digital	one-tuner	As above
B32A24Z	\$900	32	4:3	analog	N/A	1/1	0/0	0	0	2-line analog	_	As above
	Trinitron Wega KV-35S66 KV-32FS12 Trinitron Wega KV-35S42 KS-32S46 KS-32S42 CW34X92 36AX60 36A60 36A50 36A40 32AX60 32A50 32A40 32A30 D36D53T IQB36B44W IQB32B44W C36C41T C36C35T B36A24Z C32C41T C32C35T	Trinitron Wega KV-35S66 \$1,299 KV-32FS12 \$1,199 KV-35S42 \$1,199 KS-32S66 \$799 KS-32S42 \$699 CW34X92 \$4,500 36A60 \$1,200 36A60 \$1,200 36A50 \$1,100 36A40 \$1,000 32AX60 \$900 32A50 \$750 32A40 \$700 32A30 \$600 D36D53T \$1,800 IQB32B44W \$1,500 IQB32B44W \$1,500 C36C41T \$1,300 C36C35T \$1,250 B36A24Z \$1,150 C32C35T \$1,000	Trinitron Wega KV-35S66 \$1,299 35 KV-32FS12 Trinitron Wega \$1,199 32 KV-35S42 \$1,199 35 KS-32S66 \$799 32 KS-32S42 \$699 32 CW34X92 \$4,500 34 36AX60 \$1,300 36 36A50 \$1,100 36 36A50 \$1,100 36 32AX60 \$900 32 32A50 \$750 32 32A40 \$700 32 32A30 \$600 32 D36D53T \$2,300 36 IQB36B44W \$1,500 32 IQB32B44W \$1,500 32 C36C41T \$1,300 36 B36A24Z \$1,150 36 B36A24Z \$1,150 36 C32C35T \$1,000 32	Trinitron Wega KV-35S66 \$1,299 35 4:3 KV-32FS12 \$1,199 32 4:3 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digital 32A30 34A30	Trintron Wega

Note: All information supplied by the manufacturers.

N/A = not applicable. 1 Manufacturers' quoted prices; dealer prices vary. 2 SD = standard-definition (digital); ED = enhanced-definition (digital); HD = high-definition (digital)

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ShelfLife

How to find the right home for your gear

by Teri Scaduto

n the days before home theater, audio and video gear occupied separate living quarters and the storage options were simple: a shelf or rack for stereo components and a stand to hold the TV, VCR, and cable box. How things have changed! It started out innocently enough when you connected your VCR to your stereo receiver. Then you went and added three or four new speakers, a DVD player, digital surround sound processing, and a satellite receiver to the mix. Now your A/V gear and accessories are threatening to take over your home, and you've got to find something to hold them that's not only sturdy but looks good, too.

Shopping for a wall system or a rack might not be as much fun as buying all those components, but it doesn't have to be a chore. Think of it as finding a home for your gear, and start out with the same questions you'd ponder if you were renting an apartment or buying a house.

How much can you afford to spend? How much room do you need? What style appeals to you? Is it structurally sound? Will it be easy to get stuff into and out of it? Can you cope with a handyman's special, or does it have to be ready to move in? Are you putting down roots, or will you be moving again soon?

In the world of real estate, "location" means selecting a neighborhood with all the amenities. With A/V furniture, it means deciding whether you're going to put the entertainment center in the living room or the family room (or the bedroom, kitchen, or den). For some people, the room's décor will determine the unit's style.

Where you place your A/V rack or entertainment center within a room is also important. Choose a spot that affords a good view of the TV from as many comfortable



seats as possible, taking into account the distance (sit too close to a big screen and all you'll see will be pixels, too far and the impact will be lost) as well as the angle of view (especially important with rear-projection sets). And try to find a location that will keep the cable runs to your speakers as short as possible while also letting you aim the remote control without any obstructions between your listening position and the gear.

Next, measure the available space — height, width, and depth — to determine the maximum possible size of your new rack or entertainment center. Bigger isn't necessarily better. You don't want a cabinet that blocks the flow of traffic within the room or whose scale is out of proportion with the other furniture. If possible, allow for some space between the unit and the wall so you won't have to move the whole thing whenever you

need to get behind it — and, believe me, you will. Drawing a floor plan on a piece of paper can help you determine the proper fit. Pencil in the dimensions of the space you've assigned for your home theater or audio system, and bring it along when you shop.

Sized Right

The most important factor in determining the size of your rack or entertainment center is your gear.



Before you even begin shopping, measure every piece. Write down the measurements, and take them with you. Keep in mind the need for adequate ventilation, especially for power amplifiers and receivers. This means not only allowing enough space on all sides but also making sure that the gear won't be confined between solid cabinet backs and doors. And remember to leave room for odds and ends like remote controls and disc-cleaning kits as well as your discs, tapes, and videogames (unless you plan to store them someplace else).

Next, make a wish list of any A/V components you've been coveting — maybe a widescreen high-definition TV, a DVD megachanger, a CD recorder, a hard-disk recorder, or a satellite receiver. A newly married couple planning a large family would be shortsighted to buy a two-bedroom house with a tiny yard. So unless you intend to upgrade your A/V furniture along with your gear, look for a high-quality piece that either has the space for potential additions to your A/V "family" or that has



Above, Bush Furniture's Bayside AV70245 entertainment armoire (\$500) comes in a whitewashed finish and can accommodate most 36-inch TVs and four A/V components.

Right, Ashley Furniture's Millennium Apollo W616 wall system (about \$750) can hold a large direct-view TV or a small rear-projection set and comes in an oak, pine, or black finish. the flexibility to grow along with your home theater.

Which One's for Me?

Once you have a good idea of your storage needs and space restrictions, you can decide what type of A/V furniture will work best: a rack, a self-contained cabinet, or a wall system. Racks are no longer for audio gear only. The features that made them well suited for holding stereo components - strength, stability, ventilation - are just as important for video equipment. If you go the furniture route, the choice is between a cabinet that holds a TV and several components, often behind closed doors, and a wall system, which usually has a TV cabinet plus one or more additional shelf units or cabinets. You can find many sizes, shapes, styles, and levels of quality within each category.

So how do you find the right match for you and your gear? Knowing how much you can spend and what styles you prefer will point you in the right direction. If your budget is limited, head for the home centers, discount stores, consumer-electronics chains like Best Buy and Circuit City, or low-cost furniture stores like Ikea. All of these retailers carry "knock-down" units that require assembly once you get them home.

Budget furniture manufacturers such as Bush, Sauder, and O'Sullivan offer a wide variety of inexpensive A/V pieces, often made of particleboard covered with woodgrain or black vinyl veneer. Carefully examine the floor samples in stores, looking for things like doors that don't close properly and easily scratched or torn veneer — you're likely to encounter the same problems at home. Try to find out the maximum weight the TV shelf can hold, or look for a design with a vertical center support (usually separating two smaller storage spaces or sets of shelves) beneath the TV shelf. Don't walk out with a box that's not factory sealed — you don't want to find out halfway through putting the unit together that some key pieces are missing.

If you'd rather not mess around with tools but don't mind using a little elbow grease, consider buying an unfinished solid-wood cabinet. Generally made of pine or oak, these come fully assembled and require only painting or staining.

If you want a fully assembled and finished entertainment center delivered to your home and set up where you want it, shop at upscale department stores or furniture showrooms that carry pieces from companies like Broyhill, Thomasville, and Hooker. These cabinets and wall units have the feel of fine furniture and come with features such as built-in lighting and power strips and doors that glide on tracks.

Specialty electronics dealers carry highquality A/V racks that are built to take the weight of heavy gear and to minimize vibrations and resonance. Many have rigid steel frames and tempered glass or steel shelves, and some provide cable-management systems that allow you to run the wires down the columns, through clips on



MANUFACTURERS

American Drew

P.O. Box 26777, Greensboro, NC 27417-6777 336-294-5233; www.americandrew.com

Ashley Furniture

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BDI

Becker Designed, Inc. 14101 A Parker Long Ct., Chantilly, VA 20151 800-428-2881: www.bdiusa.com

Bell'O International

711 Ginesi Dr., Morganville, NJ 07751 732-972-1333; www.bellointl.com

Billy Bags Design

4147 Transport St., Unit A, Ventura, CA 93003 805-644-2185; www.billybags.com

Boltz USA

6060 Avenida Encinas, Carlsbad, CA 92009 877-804-7650; www.boltz-usa.com

Broyhill Furniture

300 Broyhill Rd., Rutherfordton, NC 28139 800-327-6944; www.broyhillfurn.com

Bush Furniture

Bush Industries

1 Mason Dr., Jamestown, NY 14702-0460
716-665-2000; www.bushfurniture.com

Hooker Furniture

440 E. Commonwealth Blvd., Martinsville, VA 24112 540-632-2133; www.hookerfurniture.com

Lovan

1610 E. Miraloma Ave., Placentia, CA 92870 714-630-8208; www.lovaninc.com

Mastercraft Furniture

P.O. Box 239, Clarks Summit, PA 18411 570-586-1811

O'Sullivan Industries

1900 Gulf St., Lamar, MO 64759 417-682-3322; www.osullivan.com

Salamander Designs

30 Arbor St., Hartford, CT 06106 860-313-0525; www.salamanderdesigns.com

Sanus Systems

3785 Lexington Ave. N., St. Paul, MN 55126 800-359-5520; www.sanus.com

Sauder Woodworking

P.O. Box 156, Archbold, OH 43502 800-523-3987; www.sauder.com

Standesign UK

Unit 5, Quay Lane Industrial Estate Gosport, Hampshire PO12 4LJ United Kingdom 44 02392 501888; www.standesign.com

Target Audio Furniture

Suite 6A, Britania House Britania Estate, Leagrave Rd., Luton, Bedfordshire LU3 1RJ United Kingdom 44 01582 401244; www.targetaudio.com

Thomasville Furniture

P.O. Box 339, Thomasville, NC 27361-0339 800-927-9202; www.thomasville.com the back of the shelves, or through a series of holes drilled through the shelves.

Racks work well with rear-projection TVs, which most wall units can't accommodate, and their rigid construction is ideal for gear like turntables, which can easily pick up vibrations from air conditioners, refrigerators, and passing foot traffic. Many models allow you to configure shelving to meet your specific needs - for instance, by connecting two component towers with a bridge shelf over a TV. The open style is great for ventilation - and for showing off your gear — but not everyone wants electronics to play a starring role in a room's décor.

You'll find that there's a rack or cabinet for every type of home and every kind of A/V gear. A couple of shopping tips: compare prices and shop the sales.

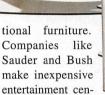
The Final Choice

Wood furniture can be beautiful, but if you want to put your gear on a pedestal, opt for an open-frame rack. Companies such as Sanus, Lovan, Target, BDI, Bell'O, Billy Bags, and Salamander (see list at left) make racks that feature sturdy construction, easy access to your gear, and some mobility — at least compared with a towering solid-wood armoire. Rack prices can range from around \$330 for the strong and functional LRX4 four-shelf rack from British manufacturer Target to \$1,800 for the Billy Bags Model 3003 component center, which holds nine pieces of gear and a TV up to 32 inches in a rigid steel frame. You'll find that most of these companies make units in a variety of sizes and that some have products ranging from a floor stand for a big power amplifier to elaborate wall systems.

But the functional look isn't for everybody — and it might raise objections from other family members who may not have achieved your level of audio/video enlightenment. To keep the peace, you'll want to look for something that works well both as a place to hold your gear and as more tradi-

Top, BDI's Arena TV stand (\$700) and AV Tower (\$800) both allow you to keep cables out of sight by running them behind the curved plywood back panels.

Right, Standesign's Penta Quatro (\$399), available in black or silver chrome finish with shelves in black ash, cherry, or tempered glass (shown).

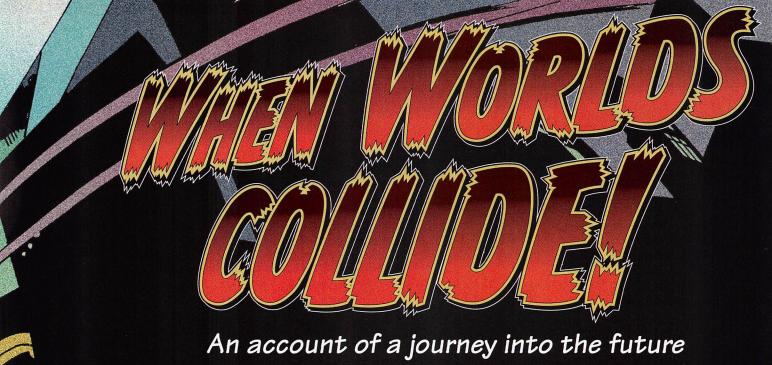


ters that will fit in with most room décors, while companies like Mastercraft, Ashley Furniture, Hooker Furniture, Broyhill, and American Drew offer more traditional furniture designs, often made with solid wood or with real-wood veneers. It's easy to pay quite a bit for these pieces, but you will be getting heirloom-quality furniture in return.

inding the right storage unit is less about variety and cost — because you'll find plenty to choose from at every price level — than it is about time and patience. If you take the time to go through the catalogs, check out the online stores, and walk through the showrooms, you're sure to find something that can do justice to both your gear and your home.







by A Time Traveler

s I lie here on my bed, my mind reeling from the events of the past few hours, I can scarcely believe what has happened. I think this experience has ruined me, and that I will never again be a whole man. My head aches, and my hand quivers as I begin to write. Still, I must try to communicate what has occurred.

As is my custom, I was working in my laboratory, sending and receiving telegraphic code on my new Marconi set. After sending my best wishes to the wireless operator onboard the RMS Titanic docked in Southampton harbor, and receiving his gracious reply, I leaned back in my chair and gazed out across the London skyline.

Suddenly, an immense storm cloud descended around my house. A whirlwind came from nowhere, and blasts of thunder trumpeted from the sky. I instinctively reached toward the Marconi set, one hand on the antenna, my other hand grasping a bottle of cocaine powder, when I was struck by a bolt of lightning. There was an explosion, a flash of intensely brilliant light, and I watched in amazement as the hands on my mantle clock sped forward at precarious speed. Then the smoke cleared, and all was calm. My laboratory still stood, but it looked immensely old. My gaze wandered to the window, and I gasped at the sight before me. The city was filled with towering glass spires, and the sky glittered with silver aeroplanes. It dawned on me, my dear reader, that I had traveled into the future.

I stood dumbfounded, and then the door opened and a young woman entered, sitting down before me. She had an angelic face, framed by long blonde hair, and seemed to be little more than a child, but her short

purple dress made me blush profusely. She extended her hand and, to my amazement, shook my offered hand vigorously.

"Hi! My name is Alison, and I'm a customer-service representative. Sorry about the inconvenience. Our new Windows 2020 has a small bug. When a hacker creates a General Fault Protection Error, a wormhole opens, and someone from post-Victorian London gets transported into the future. Don't be alarmed — it happens all the time. We'll have Pentium XXVIII rebooted shortly. Meanwhile, can I help you with anything?"

I regarded her in amazement, not understanding a word. Speechless, I could only gesture to my dusty old Marconi set, now sitting on the fireplace mantle.

She smiled. "Oh! You're interested in radios and things. Good! That's my specialty - I'm a Mixen Vixen First Class. Let me bring you up to speed. As you know, Tom Edison invented the phonograph in 1877. Then nothing important happened until 1969, when Al Gore invented the Internet."

I finally managed to utter my first words.

"What is an Internet?"

"Oh — good question! The Internet is just like the gas and water pipes into your house, except it connects computers — machines like big calculators that rapidly exchange information. It really changed everything in the 1990s, including the music business, but it took awhile to untangle all the issues. The crux of the revolution was that the Net was too efficient at conveying information, and that overcame the practical obstacles that had formerly protected IP."

Again, I stared at her, perplexed.

"You know, Intellectual Property — books, music,

movies, and stuff like that. Once the technical barriers were gone, the only thing protecting IP was the law. So, we needed lawyers to find a solution. That legal work, combined with some fabulous new plumbing, created the new paradigm."

"I'm sorry," I said. "I'm sure everything you're saying makes sense, but it all just seems like gibberish to me."

"Maybe a little bit more history would help," she said slowly, as if speaking to a child. "In the old days of plastic records — your days, that is — you needed a factory to make the records, and lots of trucks to carry them to stores. The system was self-protecting because individuals couldn't duplicate those steps. Even the best bootleg copies had obviously inferior sound.

"The Internet removed those obstacles. A listener could post a recording on her Web page, and then any other listener could download it. Theoretically, the technological system was in place so that a record company would only be able to sell a single copy of a record, which someone could then post so that everybody else could have it for free. Unless they could charge millions for that first copy, that wasn't a very good deal for record makers.

"Anyway, cease-and-desist letters were

sent to everyone with copyrighted music on their Web pages, and most of those personal pages were closed down, with only a few pirate sites still operating. But other companies started up, and they presented greater challenges. In 2000, for example, a Web site called MP3.com started a service so that listeners could access a digital library and listen to songs anytime, from anywhere, provided they'd already bought a physical copy of the recording. The record labels said that the copies in the library were infringing, and they won the day in court, temporarily shutting down the site and collecting around \$100

My eyes opened wide at that figure, mentally converting it into pounds sterling. "Music was really worth that much?"
"The global music market

million in

damages."

"The global music market was worth more than \$38 billion annually in those days. Anyway, MP3.com retooled its service, posting songs that it had licensed. If you ordered a disc from a retailer like TowerRecords.com, you could immediately also stream it from MP3.com so that you wouldn't have to wait for the disc to arrive in the mail to hear it. It was clear by 2000 that the concept of music retailing was being transformed."

"Did they still have record shops?"

"Yes, but records were called CDs — small, flat discs that stored music digitally. And most people did still buy their music from stores — at least for awhile, anyway. Meanwhile, Napster was shaking the industry like a San Francisco earthquake."

Again I interrupted.

"Napster?"

"It's a kind of haircut, but it was also the name of a little company, started by a boy in his spare time, that revolutionized the global music industry. You see, when an individual puts someone else's copyrighted music on a computer, that's infringement. But what if a company helps people exchange copyrighted music from one person's computer to another, without actually posting, hosting, or serving any music files? That's what Napster did, and it was wildly popular, attracting a million new users every week — so, of course, it was sued for contributory infringement.

"After some wrangling, Napster lost the suit in 2001, the court finding that its popularity was not a defense and that its file sharing didn't have substantial noninfringing uses. But in the meantime, Napster had signed agreements with record labels that hoped to cash in on the site's popularity while weaning users away from its zerocost basis. The labels hoped people would continue to use Napster even if they had to pay a fee. It was a step toward a solution, but it wasn't good for Napster. It's tough to persuade people to pay for something they used to get for free. Napster lived on, a shadow of its former self, before its server farm was plowed under in 2003."

"Server farm?"

"Uh, that's a room filled with computers

that talk to the Internet. Look, here's the deal: People knew that instead of paying for Napster files, they could still get them free elsewhere. So the traffic moved to other peer-to-peer file-sharing software, like Gnutella, Publius, and Freenet. This free software was a record label's greatest nightmare. Napster at least had a company and computers to sue, but true peer-to-peer systems — called P2P for short — have neither. Napster had a central file index, but P2P systems used distributed indexes on individual users' computers. P2Ps are simply a way for individuals to share files from one computer to another.

"P2Ps really took off in 2002. For the record labels, the only outcome of programs like Freenet was to decommercialize information — they were not amused. To make matters worse, the labels' first attempts to control their IP — using something called the Secure Digital Music Initiative, or SDMI — made it a pain to use MP3 players and other devices. Ironically, many people stuck with bootleg unprotected music files simply because they were more convenient.

"Simultaneously, 'Aimster' programs started popping up. They piggybacked onto programs like America Online Instant Messenger so users could easily swap music, text, video, and graphics files with anyone on their buddy lists. This allowed people to chat about music while listening to it. That's nice, because you're sharing with friends, not unreliable strangers, and because it's almost untraceable."

I threw up my hands in despair.

"Please, let me try to understand this. In the future, people use giant calculators living on server farms to steal records?"

"Well, that's pretty close."

"What did musicians think of all that?"

"They realized that they could bypass the record labels' manufacturing, distribution, and marketing services and use the Internet to sell directly to their fans. They figured that if a company like Dell could sell computers that way, they could do the same thing with music. Fans flocked to the sites, where they bought some songs, but they also shared them among themselves for free. Most musicians made less from direct sales than they had in royalties from the record companies. Like so many others, they had embraced the Internet only to burned by it.

"To complicate all this, the telecommunications companies constructed a vast broadband system that allowed them to transmit large music and movie files almost instantly. The Internet boom at the dawn of the century — sorry, at the dawn of the 21st century — was only a tiny preecho of the explosion that occurred in 2007. Whereas music downloading was formerly an avocation of kids with fast connections in their college dorms, it now became everyman's pastime. Thousands of servers and shared sites were offering several million albums at any given time."

"It sounds like a terrible nightmare."

"Well, the rules had changed, that's for sure," she said. "The record labels had proved that the law was on their side, and that the new technology was promoting piracy and making people uncaring about its consequences. But they also realized that even the rule of law was useless in protecting their old business models. They needed both to use the Internet to distribute their products and to find new business models to profit from it.

"And that's exactly what happened. Downloading is now more popular with consumers and more profitable for the record labels than distribution on physical media had been. But the popularity of free, peer-topeer file sharing is also undiminished. This hasn't hurt record sales - it has even promoted interest in music and thus increased sales. If they like the free downloaded versions, listeners are willing to pay for new music. Musicians routinely selfpublish on the Web, sign contracts with labels, and also partner with softdrink companies, airlines,

football teams, and any other means to promote and sell music. Some musicians simply give away their recordings and make money from product endorsements and live concerts."

"Musicians and football teams?"

She shrugged. "New-media conglomerates sell access to a celestial jukebox with millions of music and video downloads and streams. They also sell tickets for live Webcasts, charge for pay-per-view and rent-to-own events, give away free music to promote other ventures, sell advertising on free music broadcasts, sell demographic data on the people who listen to free music, sell ads attached to music files, and generally use music as aggressively as possible, in any way possible, to generate revenue. The vast complexity of the technology needed to accomplish all this is topped

only by the gargantuan legal infrastructure needed to handle all the accounting, copyright, and licensing issues involved."

"But what happened to the old record labels?"

"They became development and marketing divisions within the much larger multinational corporations that owned them. They still cultivate new artists and market their talents, and some even still manufacture and sell discs. But they now have infinitely more complex revenue streams, compared with the days before the Net. Today's world is a far more complicated place, but music is more important in people's lives, and more ubiquitous, than ever."

I held up my hand, stopping her narrative. "This is amazing to me. I can't believe that things

y 2020, you will have access to a celestial jukebox holding millions of music and video downloads.

would change so fast."

"Yes, this all happened in about 20 years. But that's not unusual. History doesn't occur gradually — it happens in spurts. The first powered flight of a heavier-than-air machine occurred in your era — 1903. Then only 66 years later, we walked on the moon. That's a spurt."

"What? Men on the moon? Miss, you must be —"

She ignored me. "Here — listen to this!" She pressed a button on a kind of pocket watch, causing distasteful music to burst forth.

"Do you like it? Oh — I guess not. So I'll input a frowny face for you. The flugelhorn player in this band is being promoted by Microsoft because her

clothing line was licensed for an action figure used in print advertising for a new movie download from a NASA Mars base. By playing that and getting your response, I just got a 0.001 share in PohlmannCorp. Unfortunately, it's currently trading for 2ϕ a share. Anyway, that's how music works today! Oh — our rebooting is finished, so it's time for you to go back."

The young woman glanced at her pocket watch again and frowned.

"Hmm, my database shows that you were booked on a cruise. Gosh, I'm not supposed to do things like this, but you're such a nice man."

She smiled and picked up a poker from the fireplace, and then, like a cricket batter, she swung it with all her might, strik-

ing me square on the jaw. I fell down, the room swirled about me, there was a flash of bright light, and then I was home. When I picked myself up off the floor, I realized I was alone. The London skyline had returned to normal. My head throbbing, I stumbled to my bed and collapsed.

I cannot say with certainty how my journey occurred. I certainly cannot explain this glimpse into a future world where piracy is embraced by the populace. But apparently radioing of signals, both sound and pictures, will become commonplace. Every per-

son will be able to listen to and see any program, at any time. This brave new world could be wonderful, I suppose.

I wish I could say the same about the people of the future. Why on earth would that girl tell fantastic stories of men on the moon? And why did she hook me with a poker? Now, thanks to her, I've missed my train to Southampton, and the *Titanic* has sailed without me.

With a nearly broken jaw, a missed ocean voyage, and my head spinning with tall tales of moon men and of calculators living on farms, so ends this account of my travels to the future. I remain,

humbly yours, a Time Traveler

SXV

Multimedia Maven

The latest and greatest from the Consumer Electronics Show

EDITED BY MICHAEL ANTONOFF



world: Munch's Oddysee, but between 10 and 15 titles will be available on launch according to Microsoft's Seamus Blackley. Built around a 733-MHz CPU and a custom-designed graphics processor, each Xbox includes an 8-gigabyte (GB) hard drive, 64 megabytes (MB) of RAM, an 8-MB memory card, four controller ports, and a proprietary A/V connector. Though it loads games from a DVD drive, you'll need an optional remote to play movies. The hardware supports 3-D audio effects and 256 audio channels. With a maximum resolution of 1,920 x 1,080 pixels, Xbox is ready for high-definition TV, but Blackley says gamemakers aren't yet developing 16:9 aspect ratio HDTV versions. Microsoft www.xbox.com

mighty disc

ess than 2 inches in diameter including its non-removable plastic case, a DataPlay optical disc can hold up to 500 MB and will cost "under \$10" when the format becomes available in the fall. DataPlay promises a new generation of tinier MP3 players using remov-

able discs each holding up to 11 hours of music. Portable CD/MP3 players perform that feat now, but they're using 5-inch CDs.

Not limited to music, a DataPlay disc could store 250 photos or be sold with prerecorded music or movie trailers. Several manufacturers are supporting the format, including SonicBlue, maker of the Diamond Rio players and SmartDisk, which will offer a portable device to transfer images from digital cameras to DataPlay discs in the field.

DataPlay 720-562-2000, www.dataplay.com

world radio

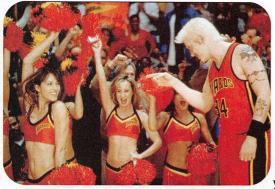
ith thousands of broadcast and Internet-only radio stations now streaming over the Net, dedicated Web-radio appliances that tune out the need for a computer are proliferating. RCA's Internet Radio (\$299, shown in front below) and 3Com's similar Kerbango Radio (\$300) are two of the streaming-radio products we saw at the show that require a broadband connection (cable modem or DSL). Another is AudioRamp's iRAD-TS (\$299) — an integrated shelf-top system that also includes a CD player, local AM/FM tuner, amplifier, and speakers — and the iRAD-TC (\$249), a stereo source component. Both connect to a Home-PNA or Ethernet home network and are expected to be available this spring. And the Philips FW-i1000 (below), a broadband minisystem with a three-CD changer and dual cassette deck (slated to hit stores in June at a price still to be set) lets you select and record Net radio programs according to genre, language, or region.

The stereo Dynamic Digital Link Player from Smart Media Online, with a 56-kbps modem, was expected to be available before the end of March. Price is \$200 if you already have broadband or \$100 plus \$15 a month if you sign on with Smart Media's dial-up service. And Dig-Media's DigRadio, with a built-in Ethernet connector and 56-kbps modem, will cost about \$300 when available this spring.

AudioRamp 949-789-1140, www.audioramp.com DigMedia 760-431-3500, www.digmedia.cc Philips 800-531-0039, www.philipsusa.com RCA 800-336-1900, www.rcainternetradio.com

Smart Media Online 800-700-8883, www.smartmediaonline.com 3Com 408-326-5000, www.kerbango.com





nuon dazzles

ollywood's first Nuon-enhanced DVD, *Bedazzled* (20th Century

Fox), was set to be released on March 13. The movie can be played on any DVD-Video player, but if you want to access its

special features, you'll need a Nuon-equipped player. In a preview at CES by Nuon developer VM Labs, we saw a special menu that takes you through all of the Devil's (Elizabeth Hurley's) costume changes or into a "Just for Fun" section, which automatically freezes and zooms in on a scene at a basketball game featuring Elliot Richards (Brendan Fraser). The zoom feature worked so well we couldn't help but notice that some of the "fans" were cardboard cutouts — with today's technology, you'd think director Harold Ramis would have digitally cloned an extra to fill out the stands.

Nuon 650-917-8050, www.nuon-tech.com

channel web

Vou used to need a set-top box like WebTV to turn a boob tube into a window on the Web, but now several companies are offering direct-view TV sets with built-in Internet access. Consider it like another channel, though one with a gazillion programs. Among the contenders is EspriTV Internet Television, which plans to offer 27-inch (\$998) and 16-inch (\$798) models this summer. Each includes a built-in modem, wireless keyboard and remote, and PlanetWeb browser software. Besides browsing full screen, multitaskers can choose Web-in-picture or picture-in-Web (as seen below). You pay for your own Internet service provider (ISP).

Also letting you switch between the Net — with an EarthLink subscription — and a TV network beginning this summer are Panasonic's 32-inch CT-32D41 (\$850) and 27-inch CT-27D41 (\$550). Zenith is providing free Web access with its 27-inch TeleCruz TV (\$600), expected this spring. And

Princeton Graphics and NadaPC are both offering direct-view HDTV monitors using an integrated browser and Net service called Ch. 1. Princeton began selling its Al3.6HD, a 36-inch 4:3 set (\$3,499) in January. NadaPC said its 27-inch HDTV monitor would be available in April for \$199 if you sign up for 36 months service at \$22 a month.

Ch. 1 714-546-9508, www.ch1.com
EspriTV 310-277-3888, www.espritv.com
NadaPC 866-404-6232, www.nadapc.com
Panasonic 800-211-7262, www.panasonic.com
Princeton Graphics 800-747-6249, www.princetongraphics.com
Zenith 847-391-7000, www.zenith.com



jukebox heroes

ore hard-drive-based audio components were rolled out at the show, including the first from familiar audio brands and also the first with rewritable CD drives, like the MP3 Jukebox CB-200 (above, \$599) from CMC Magnetics. Available in May, the CB-200 contains a 20-GB drive, encodes at 96, 128, or 192 kbps, and has analog and digital inputs and outputs. It will let you write MP3 files on a CD-R or CD-RW, or transfer them to a MuliMediaCard via a front-panel slot, but you won't be able to record standard CD-audio songs on a disc because the system is set up to copy MP3s from the hard drive.

Owners of ReQuest Multimedia's ARQ1 can look forward to a Version 2.0 software upgrade this summer that will enable simultaneous encoding and playback. For example, if you start recording a radio program, you can play it from the beginning while the broadcast is still in progress, then fast forward through the commercials just like you can do now with a TiVo or ReplayTV video recorder. The company also announced the new ARQ-II, with optical and coaxial digital outputs, CD recording capability (in MP3 or CD format), and front-panel con-

trols. The ARQ-II with a 30-GB drive is expected to be available late this summer for around \$1,600.

Kenwood unwrapped its prototype Digital Audio Server that writes MP3 files or standard tracks on a CD-R or CD-RW. It contains a 20-GB drive, an integrated AM/FM tuner, and a modem and is scheduled to go on sale in August at a price to be announced. Harman Kardon announced the DMC 100, a DVD player with Internet connectivity and a 30-GB hard drive for storing downloaded music (see "Showstoppers," page 82). RCA's Digital Media Manager, a multipurpose compo-

nent able to rip CDs to an internal 10- to 20-GB hard drive, is expected in the fall for about \$1,000. And Compaq introduced the iPaq Music Center, a stereo component with a CD player, a 20-GB hard drive, and Internet and HomePNA connectivity. It can download music directly into Compaq's PA-1 flash-memory player and was expected to go on sale in March for under \$1,000.

CMC Magnetics 925-829-5311, www.cmcdisc.com
Compaq 800-345-1518, www.compaq.com
Harman Kardon 516-496-3400, www.harmankardon.com
Kenwood 800-536-9663, www.kenwood.com
RCA 800-336-1900, www.rca.com
ReQuest Multimedia 800-236-0802, www.request.com

make your own dvd

Sure, DVD player prices are falling and discs are finally starting to show up in quantity on video-rental shelves, but the most exciting



DVD development yet is just around the corner: making your own DVD movies with your home computer, complete with custom menus and interactive links. At CES Compaq displayed a \$2,399 Presario 7000 series PC with an IEEE 1394 (FireWire or i.Link) jack, a 30-GB hard disk, and built-in Pioneer DVD-R drive. Available this spring, the system comes loaded with

Pinnacle's StudioDV editing program and Sonic Solutions' DVD It! authoring software — all you need to edit home videos and transfer them to DVD-R discs for viewing on any DVD player. — AI Griffin

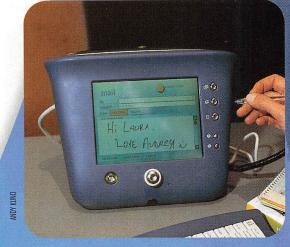
Compaq 800-345-1518, www.compaq.com

mp3 to go

P3 portables were abundant using a variety of P3 portables were abundanced splash was media, but perhaps the biggest splash was made by chipmaker Intel, which introduced its first dedicated music device, the Pocket Concert. Though you'll need a USB-equipped PC to download MP3 or WMA music files and transfer them to the portable, you'll then be able to use it as a source component connected directly from its optional docking station (see photo) to your stereo system. The \$300 player comes with a generous 128 MB of memory, though it lacks a card slot for extra storage. It includes an FM radio and "neckphones." The docking station is part of a \$60 accessory kit that includes a car adapter and rechargeable Ni-MH batteries, or you can get the whole orchestra for \$350.

Panasonic showed two "e-wear" music players, the matchbook-size SV-SD75 for your arm and the SV-SD05 for your head.
Each is \$400 and incorporates a stamp-size 64-MB Secure Digital card. Given typical flash-memory capacity, you'll be hungry for new music in about an hour, while a hard-drive player can feed your ears for days. The smallest at CES was Hy-Tek's Treó (\$399), which holds 6.4 GB.

Hy-Tek 800-835-7278, www.treoplayer.com Intel www.intel.com/home/audio Panasonic 800-211-7262, www.panasonic.com



browsing with blinders

t doesn't make toast, but it performs tasks that take you well beyond breakfast, like checking the weather, monitoring your stocks, even ordering a meal delivered. Called an Internet appliance, it helped set the tone for this year's CES gadget-fest.

Touted as cheaper and easier to use than a computer, Net appliances enable you to surf the Web and send email, but you can forget about word processing, spreadsheets, or most games. These devices have no hard drives, so you can't install software. Standouts for both form and function included Sony's NTE-D101 "eVilla" network entertainment center and 3Com's Audrey (photo above).

The eVilla is Sony's attempt to make Net connectivity truly ubiquitous. It consists of a 15-inch, portrait-style FD Trinitron screen, a keyboard, and a mouse; the designated ISP (\$22 a month for unlimited access) enables users to access e-mail, tune in Net radio stations, view video and still images, navigate the Web, and customize their information. Able to accommodate the Web bookmarks, e-mail accounts, cookies, and preferences of four different users, the eVilla is designed to help alleviate household PC traffic jams by providing alternative Internet access. It includes a Memory Stick slot, two USB ports, a built-in 56-kbps modem, and an Ethernet port for future broadband upgrades. Available in April, the eVilla will sell for about \$500 (plus the ISP fees).

Audrey is an Internet appliance from 3com with the look and feel of an Etch-a-Sketch. A stylus and touchscreen enable you to scribble e-mail messages or events on your calendar. When the stylus is stored in its slot atop the keyboard, it flashes green to

signal new messages. Remember Jane Jetson dialing for dinner in her futuristic kitchen? Audrey reflects such retro sci-fi thanks to a dial below the 7³/₄-inch screen that calls up one of 12 preset channels. You enter Web addresses via a small infrared keyboard. For the truly wired, Audrey also allows two Palm organizers to synchronize with its shared family calendar. 3Com lets Audrey users continue with their existing ISPs (except AOL and CompuServe!) and e-mail

addresses. The device has a built-in 56-kbps modem, and for about \$60 you can get an Ethernet adapter for a cable modem or DSL hookup. Cost: \$499 in white or \$549 in the groovier blue, yellow, green, or slate.

— Laura Evenson

Sony 800-222-7669, www.sel.sony.com **3Com** 408-326-5000, www.3com.com

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round Control to Road Gear One; come in, Road Gear One. Do you copy?

I copy, Ground Control. I can hear you loud and clear — and without distortion, for that matter.

Wonderful. Status report, please.

Roger, Ground Control. As you're aware, I'm currently orbiting the earth in an experimental mobile-entertainment vessel, so perhaps I should go on record as Off-Road Gear One for

Very well. We'll call you ORG-1 for short. And it's Steve, by the way. Come again?

It's Steve here at Ground Control, not Roger.

Uh, whatever. Anyhow, I'm ready to file my first report regarding all of the cool doings in the world of mobile electronics at this year's Consumer Electronics Show,

Satellite radio is the best thing to broadcasting FM programming



which was held in Las Vegas back in January. Proceed, ORG-1.

Roger, Steve. The main happen to radio buzz out in the Gold Tents — the nickname for the expansive, tentsince free-form enclosed area across the street from the main Convention Cenin the '60s. ter where most of the mobile manufacturers showed off their goodies for 2001 - concerned satellite radio. Hence the impetus for my current orbital positioning, you see.

Very hands-on of you, ORG-1. What's satellite radio again?

The short, snappy answer to that question is that it's the best thing to happen to radio broadcasting since the advent of free-form FM programming some 30-odd years ago. The two satellite radio providers — Sirius Satellite Radio, based in New York City, and XM Satellite Radio, with headquarters in Washington, DC — will each offer 100 digital-quality coast-to-coast channels



Heads in the clouds: Kenwood's Siriusready HDC-X917 (top, \$600) and Sony's XM-ready plug-and-play Satellite Radio Receiver (\$129 to \$399 depending on install options).

> That all sounds good, ORG-1. What's the programming cost to receive satellite radio?

Both services will cost \$9.95 a month - not a bad deal in my book, provided they live up to the promise of freeform radio. Still, the one question that often comes up when people see that price of admission is, "Why should I pay for radio when I've been getting it free all these years?" But as XM president and CEO Hugh Panero so succinctly put it, "Radio is to the car what TV is to the home." In other words, it's essential entertainment — and don't forget how wary people were about costs the first time they were offered the option of pay-TV via cable.

Whoa - looks like I've got to end this transmission, Ground Control. There's plenty more to talk about next time, such as MP3-ready head units and in-dash DVD players — things that were barely a blip on the mobile radar a year ago.

Good deal. Just promise me one thing, ORG-1.

What's that?

Don't even think about calling me "HAL" the next time you make contact. The 2001 shtick has been done to death.

I'd never do that to you, Ground Control. Besides, I already used the HAL bit last year, and I'd hate to repeat myself.

consisting of music, talk, sports, and children's programming by (they hope) late spring or (more likely) early summer. The best thing is that the programming choices are much more broad, inviting, and inventive than on conventional radio, and they're not driven by rigid playlists or advertising

whims (though as many as half of Sirius's

nonmusic channels will have ads). So what about the hardware?

On the XM side of the galaxy, Alpine exhibited six XM-ready head units and Pioneer showed 14 models. Add in the ones from Blaupunkt, Clarion, Delphi Delco, and Sony, and two dozen XM-ready heads in all were previewed at CES. Their prices will run about \$150 higher than for standard heads.

As for Sirius, its manufacturer base includes Alpine, Clarion, Delphi Delco, Jensen, Kenwood, Panasonic, Pioneer, and Visteon. Sirius heads will also be factoryinstalled options in 2002 model vehicles from the likes of Ford, Chrysler, BMW, Mercedes, and Volvo. And, I have to say, Sirius's Friday-morning, live-from-thedesert feed with comedian Ken Ober tuning in satellite radio in a convertible really crystallized the experience for me.

Mike Mettler, editor in chief of Car Stereo Review's Mobile Entertainment, also has a satellite office in Hoboken, NJ.

What if I could Customize everything the way I customized My car's multimedia System?

EXHIBIT A: My family



CASE#59



Steve Evans

Obviously, you can't choose your family. But once you get into your car the chance to pick and choose really opens up with Alpine's mobile multimedia packages. These are no ordinary systems off the rack. You practically build

them yourself - adding only the components you want. So you can get directions from the navigation system, while people in the back watch football, play video games or put in a DVD movie. And that makes driving fun. Even long trips with the family.

PRODUCT:

Mobile Multimedia Station™

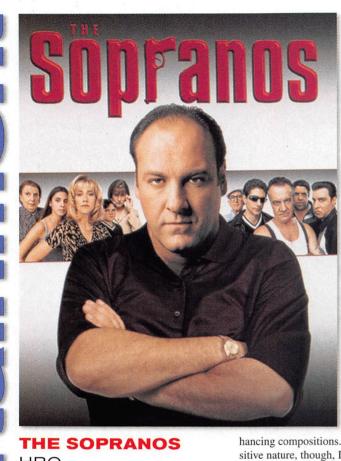


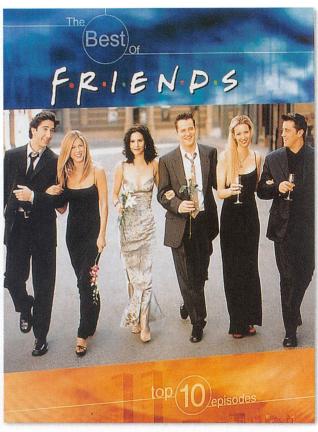
- 1. Eliminate bogus fishing stories.
- Replace nagging tendencies with ability to cook.
- 3. Replace.
- 4. Remove smart mouth.
 Insert smarter brain.
- 5. Remove tendency to bury underwear.

//////LPINE

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www.alpine1.com





HBO

Series **** DVD ****

FRIENDS

Warner

Series ★★★ DVD ★★★

wo TV shows in the lead moviereview slot? Isn't there anything "better" to write about? Well, no - and not because cinema is suddenly terrible, but because TV can sometimes be awfully good. Since there are so many great films out there and only a limited life span (hell being a place without movies), I don't usually have much time for TV. But when I can watch The Sopranos: The Complete First Season on a four-DVD set in one sitting, and the writing and acting are this good, I make the time.

The best things about small-screen shows are usually more theatrical than cinematic story, dialogue, characters, acting - and The Sopranos scores high in all of them. Its likable-monster mobsters, portrayed with a therapist-like suspension of moral judgment, are especially fascinating. In addition, the series, shot on film and presented here in an anamorphic transfer, is filled with striking, mood-enhancing compositions. For viewers of a sensitive nature, though, I recommend intercutting The Sopranos with episodes of Friends, since the former's psychological tension, threat of sudden violence, and brutally honest depiction of the relationship between a psychotically manipulative mother and her guilty son can become a tad oppressive over time.

Friends makes the perfect, reliably funny, chill-pill antidote. Its range of Everydude characters balances sweetness with sarcasm, cuteness with palate-cleaning bitchiness all topped with a healthy dose of the usual bizarre neuroses. So it really isn't a problem that this two-DVD set is The Best of Friends, Vols. 1 & 2 rather than a complete-season collection. Personally, I'd rather have the extra

Stellar

Poor

Movie refers to the original film. **DVD** refers to the film's presentation on disc, including picture and sound quality as well as extras.

laughs than the minimal plot development. There's still a chronology to these ten episodes (two of which are double episodes), and the major events — usually new romances are covered sufficiently to avoid confusion.

The visual style of Friends is basic sitcom: shot on video, mainly straight-ahead, on a bright, evenly lit soundstage, with soft, pleasantly colored images. The DVD transfer handles the minimal challenges well. The show doesn't really need much explanation or analysis, so the absent commentary is not missed, and the two promo featurettes on the Ross's-wedding-in-London episodes plus the lame theme-tune video are enough extras. Run the next episode already.

For the commentary on The Sopranos, Peter Bogdanovich interviews show creator and occasional writer and director David Chase. Further sections of their conversation are seen in a 77-minute featurette that goes to some interesting places. The sharply shot series tends to alternate between dark images of Tony Soprano's shadowy criminal life in club and garage interiors and his airy, suburban home life. His shrink's office, where the two worlds collide, is therefore sometimes dark, sometimes bright. This pattern, however, can suddenly be disconcertingly smashed by an unexpected reversal of style, as when violence and death are acted out in a picturesque riverside setting. The photography, with its frequent use of highcontrast, low-level lighting (showing the influence of The Godfather) and expressive use of rich color is handled well in the excellent DVD transfers. The blacks are deep and the white bright. Apart from the atmospherically enveloping riverside scenes, the surround channels are used mostly for music, but voices are very clear, which is the essential thing for such a dialogue-intensive show. Each episode comes with a summary and a preview of the next episode, and the set also includes two short making-of featurettes, a seemingly endless awards list, and a DVD-ROM-accessible Soprano family tree.

Good-looking packaging helps make the nearly 12-hour Sopranos an excellent gift. Friends need only be rented or, if prescribed by a concerned physician or co-worker, bought and kept next to the Maalox. The Sopranos: English, Dolby Digital 5.1 and Dolby Surround; Spanish, Dolby Digital mono; letterboxed (1.78:1) and anamorphic widescreen; four dual-layer discs. Friends: English, Dolby Digital 5.0; full frame (1.33:1); two dual-layer discs Josef Krebs

THE EXORCIST

Warner

Movie ★★★★ DVD ★★★

illiam Friedkin's groundbreaking 1973 horror film appears now on DVD in the restored and re-edited "Version You've Never Seen" incarnation that played theaters last winter. The good news is that Warner's spiffed-up print, with its refurbished, multichannel soundtrack, comes across absolutely brilliantly. The film looks like it was shot yesterday, and the unforgettable Mike Oldfield theme sounds magnificent. (For a review of Oldfield's complete Tubular Bells on Super Audio CD, see page 125.) The bad news is that while some of the newly included scenes pack a jolt — Linda Blair's upside-down staircase descent is as creepy an image as you're ever likely to see — some of them feel very much like padding. And the concluding conversation between Lee J. Cobb and Jason Miller wraps things up in a stultifyingly literal way.

Does the flick itself hold up? Is it still (as the ads had it) the scariest movie of all time? If you're a gore hound, probably not, but for the rest of us, maybe. What's really terrifying here, though, is the commentary by Friedkin. Rather than give any interesting insights into the production, he mostly describes in excruciating detail the action of the scene we're watching. Stop this man before he comments again! English, Dolby Digital Surround EX and Dolby Surround (mono compatible); letterboxed (1.85:1) and anamorphic widescreen; Steve Simels dual layer.

ROMPER STOMPER

20th Century Fox

Movie *** DVD ****

t the time of its release in 1992, some critics blasted Romper Stomper for glorifving violence. In England, anti-Nazi organizations condemned it for condoning Hitler and neo-Nazis. They missed the point. If anyone should be angry, it should be the skinheads of Melbourne, Australia, since this powerful

Restored and repossessed: Max von Sydow, Linda Blair in The Exorcist





Skin flick: Crowe in Romper Stomper

movie vividly portrays their way of life as a boring, dead-end existence that can only result in self-destruction. Russell Crowe plays Hando, the leader of these shaved-head misfits, and though his charismatic performance commands most attention, Daniel Pollock should also be noted for his exceptionally sympathetic comrade who tries to break free of the gang.

Throughout, the handheld camerawork is exciting, the fight scenes absorbing, and the pace breathtaking. The DVD transfer is one of the best around, with so much detail that every set piece seems to have tangible texture. The sound, remastered in Dolby Digital 5.1, is also reference-caliber, fully conveying both the punched-up effects and Clifford White's inyour-face music. A supplemental disc of extras includes film-restoration demonstrations, printed reviews, and pointed interviews with director Geoffrey Wright and the lead actors, who also contribute an entertaining commentary on Disc 1. English, Dolby Digital 5.1, DTS 5.1, and Dolby Surround; letterboxed (1.85:1) and anamorphic widescreen; one dual-layer Rad Bennett and one single-layer disc.

THE FANTASIA ANTHOLOGY

Disney

Movie ★★★★ DVD ★★★★

alt Disney and his music collaborator, conductor Leopold Stokowski, had hoped that the original Fantasia would be rereleased on a regular basis, with new sections inserted each time. The coming of World War II, coupled with budgetary problems, pushed that idea to the wings, where it waited for 60 years — until finally, largely due to the efforts of Walt's nephew Roy Disnev. Fantasia 2000 fulfilled the creators' dream. On DVD, The Fantasia Anthology bridges the years by bringing the two films together in a three-disc set. Discs 1 and 2 contain the features, each with informative commentaries and documentaries, as well as the animated shorts Melody and Toot, Whis-

رك <mark>movies</mark>



Lemmon and Matthau as The Odd Couple

tle, Plunk, and Boom, the first animated film in CinemaScope and with stereo sound.

Disc 3 goes even further into *Fantasia* lore, providing a detailed group of extras for each musical composition. Among these are introductions by Walt Disney in which he discusses things like melody and tone-poem interpretation. Stokowski had recorded "Clair de Lune," "The Ride of the Valkyries," and "The Swan of Tuonela" for future releases, and these are presented here, the first with finished animation, the other two with storyboard sequences. Additional drawings and photographs are offered in groups of thumbnail-size images that can be individually blown up to fill the screen.

The original movie looks so fresh and alive in its uncut version that it belies its 1940 release date. Throughout all three discs, the THX-supervised transfers (*Fantasia 2000* being digital-to-digital) are razor sharp and devoid of artifacts of any sort, and the sound is astonishing in its transparency and dynamic range. The full-orchestra sections have real lease-breaking oomph, yet the quietest flute solo still has presence. This is one of the best DVD sets yet. *Fantasia*: English, Dolby Digital 5.0 and DTS 5.0; full frame (1.33:1). *Fantasia 2000*: English, Dolby Digital 5.1 and DTS 5.1; letterboxed (1.85:1) and anamorphic widescreen. Three dual-layer discs. *Rad Bennett*

WHEN HARRY MET SALLY

MGM

Movie ★★★★ DVD ★★★★

SMALL TIME CROOKS

DreamWorks

Movie ★★★ DVD ★★★★

THE ODD COUPLE

Paramount

Movie **** DVD ***

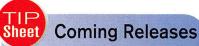
hat makes a good marriage? Three comedies use their constantly-in-conflict odd couples to explore this pressing question. When Harry Met Sally (1989) seems particularly intent on unearthing universal truths. It presents aging couples' descriptions of meeting their mates to illustrate the ran-



Ryan and Crystal as Sally and Harry

domness of lasting romance. It then goes on to explore in hilarious depth some of the "natural laws" and events that help shape or break a relationship. The film's humor grows out of perception and honesty (communicated beautifully by Meg Ryan and Billy Crystal), and as an all-around work of wit and wisdom, it equals the better films of Woody Allen that obviously were its inspiration.

Although Allen's *Small Time Crooks* lacks the depth of his comic masterpieces, it's still



THE EPICS

Eyes wide open for 2.76:1 *Ben-Hur* (Warner), 2.20:1 *Cleopatra*, and 2.55:1 *Demetrius and the Gladiators* (20th Century Fox) plus 2.75:1 *The Greatest Story Ever Told* (MGM). March/April



SOME LIKE IT HOT

Speaking of epic proportions . . . MGM, May

MARILYN MONROE:

THE DIAMOND COLLECTION

Still have room for more? There's No Business Like Show Business, How to Marry a Millionaire, Gentlemen Prefer Blondes, The Seven Year Itch, and Marilyn Monroe: The Final Days plus 40 minutes of footage from her never-completed final film. 20th Century Fox, May



Ullman and Allen as Small Time Crooks

plenty laugh-out-loud entertaining. The story examines the strains put on wedlock when, in the process of unsuccessfully robbing a bank, two battling mid-lifer marrieds come across a formula to make millions legitimately. Tracey Ullman is inspired in her portrayal of a taste-impaired, ambitious social climber, and Allen has a ball overplaying an inept but opinionated pipsqueak who sees himself as a sort of borscht-belt James Caan.

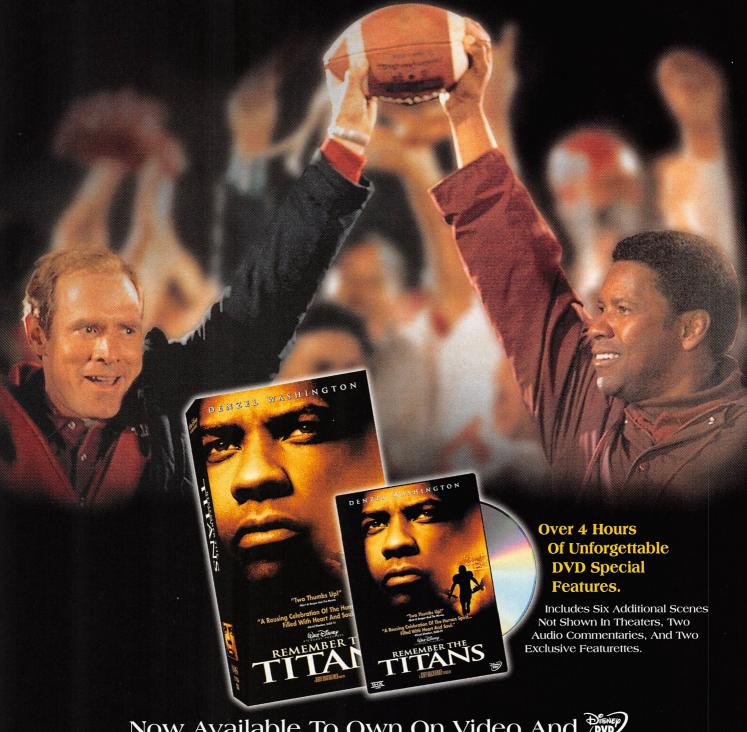
The Odd Couple (1967), by providing a man with all the qualities traditionally assigned to a wife, not only creates a situation primed with humor but also examines the supposed gender-specific differences that make it hard for a couple to get along. Neil Simon's dialogue is still delightful, and Jack Lemmon, Walter Matthau, and the whole cast are pitch perfect.

Sally's style is basically nonstop dialogue shot classically against pretty backgrounds, and this clean DVD transfer presents the pleasing images with plentiful detail. Crooks has more communicative compositions that use depth well, and the bright picture, splashed with the intense colors of Allen's suits and Ullman's outfits, are given a high-clarity DVD transfer. Contrast is good, but there are some edge-enhancement effects. Couple's slightly soft-focused image is somewhat lacking in detail, but this isn't a very visual movie anyway, more a recording of a great one-set theatrical production.

In all these talky films, the dialogue is crisp and the music pleasant, though there is little or no use of the surround channels in either *Sally* or *Couple*. The latter comes with both a restored version of the original mono soundtrack and a Dolby Digital 5.1 remix. The new sound is much fuller than the rather tinny mono but overcompensates at times by being too bassy, particularly in the opening theme music. *Crooks* is recorded in Allen's usual cutting-edge mono to combine well with '30s and '40s music recordings and help create a cinostalgic atmosphere.

Sally's extras include seven short-but-sweet deleted scenes, a Harry Connick, Jr., music video, and an intermittently interesting com-

REMEMBER THE JOY. REMEMBER THE TRIUMPH. REMEMBER THE TITANS.



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WALT DISNEY PICTURES PRESENT RUSSIANS FOR BENCKHEIMER FILMS DENZEL WASHINGTON REMEMBER THE TITAMS (TECHNICAL BLACK HINGIN) & BOAZ YAKIN SEW WILL PATTON DONALD FAISON NICOLE ARI PARKED *** TREVOR RABBI ESSE HODY RUSKIN ROWELL BY MICHAEL TRONICK ACE THESE TRONICK ACE THESE TRONICK ACE THESE TORON AND THE PROPRIET FOR THE PROPRIET OF THE PROPRI













Mackenzie Firgens and friends trip the light fandango in Groove

mentary by director Rob Reiner. There's also a good 33-minute making-of documentary, including interviews with Reiner, Crystal, Nora Ephron, and Carrie Fisher that reveal some tasty tidbits. Couple and Crooks come with trailers. When Harry Met Sally: English, Dolby Surround; letterboxed (1.85:1) and anamorphic widescreen; dual layer. Small Time Crooks: English, Dolby Digital mono; letterboxed (1.85:1) and anamorphic widescreen; single layer. The Odd Couple: English, Dolby Digital 5.1 and restored Dolby Digital twochannel mono; French, two-channel mono; letterboxed (2.35:1) and anamorphic widescreen; single layer. Josef Krebs

THE CONVERSATION

Paramount

Movie ★★★★ DVD ★★★★★

echnology may have changed since 1974, but The Conversation, Francis Ford Coppola's film about a surveillance expert, hasn't dated a bit. Harry Caul (Gene Hackman) is a pathological loner, and his talent for recording any conversation, anywhere, simply gives him a better excuse to cut himself off from life. The unraveling of Harry's world, the result of a job gone wrong, is told in an elegant, coolly controlled manner that is more European than American. Hackman's performance, David Shire's solo-piano score, and the sound-andimage montage by then-neophyte editor Walter Murch (Apocalypse Now, Ghost, The English Patient), a film landmark in itself, add immeasurably to one of the most remarkable of American movies.

You may now safely discard the old laserdisc in favor of this DVD, in which the colors and contrasts have been restored and the image properly letterboxed. A new Dolby Digital 5.1 mix adds ambience and, on occasion, subjective emotional effects. There are separate commentaries by Coppola and Murch — Coppola tends to ramble, and Murch is sporadic — but both offer lots of juicy information about the picture's creation. English, Dolby Digital 5.1; French, Dolby Digital mono; letterboxed (1.85:1) and anamorphic widescreen; dual layer.

SHAFT (2000)

Paramount

Movie ★★★ DVD ★★★★

an you dig it? Well, you should. Director ✓ John Singleton's homage to the 1973 blaxploitation classic is remarkably faithful to the spirit and look of the original. Even better, it's an utter hoot of an action picture, with a knockout performance by Samuel L. Jackson (in a variety of sensational leather coats) and a turn by Jeffrey Wright, as a drug-dealing bad guy, so wonderfully over-the-top that he makes Al Pacino in Scarface look laid back. Singleton really has the whole low-budget '70s thing down to perfection: the cinematography is suitably bleached out, the soundtrack is funk-heavy (Isaac Hayes's evocative theme figures throughout), and Richard Roundtree, the original John Shaft, even shows up briefly as Jackson's ultra-cool uncle.

This is one of the most entertaining genre flicks in recent memory, and the DVD transfer is just about faultless. Singleton's retro visuals are all but indistinguishable from the way they looked on the big screen, and the sound is explosively good. Extras include a reasonably non-self-congratulatory making-of documentary and a hilarious new music video of Hayes strutting his way through the title song. English, Dolby Digital 5.1; French, Dolby Surround; letterboxed (2.35:1) and anamorphic widescreen; dual layer. Steve Simels

GROOVE

Columbia TriStar

Movie ★★★ DVD ★★★★

HUMAN TRAFFIC

Miramax

Movie ★★★ DVD ★★★

f you're old enough to remember the Summer of Love, the 1969 World Series, or President Nixon's resignation, then these two DVDs are about as close as you should be allowed to get to today's rave scene. *Groove* and *Human Traffic* both go looking for the heart of Saturday night in the new millennium, and they find it in the reckless energy of youth. In an era when three-hour would-be epics weighed down by bludgeoning chunks of exposition are becoming commonplace, each of these immensely enjoyable movies clocks in at under 90 minutes.

Both films are about visceral attacks on the senses. There aren't any real revelations —

(Reference

THE CELL

New Line

Movie ★★ DVD ★★★★

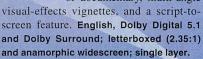
Jennifer Lopez has come a long way since her days as a flygirl on TV's *In Living Color*. Here she plays a psychothera-

pist who uses experimental techniques to enter patients' minds. At first, it's hard to get past the idea of Lopez as a doctor, but once you've reached the scene where she mind-melds with a comatose serial killer to help find his latest victim, her credibility is no longer an issue. Director Tarsem Singh's seductive style takes over the film, which shifts between blissand fear-inducing eye candy.

The Cell's anamorphic transfer does justice to Singh's vision. Scenes that take place in the "real" world are characterized by natural color, solid blacks, and crisp highlights;

when the action shifts to the brain-world that Lopez is probing, they give way to a deeper, more richly saturated palette. As with the vi-

suals, the soundtrack uses expressionistic strokes to evoke the landscape of a damaged mind. When characters speak, their voices reverberate dramatically across the three front channels. And when things take a dangerous turn, powerful bass notes resonate to convey that something bad is going to happen. Extras include two commentaries, a making-of documentary, multi-angle







Quick

unless it's news to you that young men and women don't always consider all the consequences of their actions, or that they like sex, loud music, and recreational drugs. The excesses of the lifestyle and the music hark directly back to other generations, but maybe the reason these movies feel so alive is because they're both firmly rooted in the here and now.

Groove is the stronger of the two films by a narrow margin, but in the DVD-collectibility department it blows away Human Traffic. It has a positively killer Dolby Digital 5.1 soundtrack, with the best bass I've ever heard on DVD, plus a glowing anamorphic transfer of amazing reds and great resolution, even with crappy club lighting. The DVD is crammed with extras, including documentary footage, deleted scenes, and a commentary by the director, producer, and cinematographer. You also get audition tracks, an isolated score, and a music video. Human Traffic comes with a trailer. On the plus side, it also boasts a primo soundtrack and a completely competent though hardly inspiring - widescreen transfer. Both: English, Dolby Digital 5.1; letterboxed (1.85:1) and anamorphic widescreen. Groove: English, Dolby Surround; French, two-channel mono; pan-and-scan; dual layer. Human Traffic: single layer. Marc Horowitz

PRINCESS MONONOKE

Miramax

Movie ★★★ DVD ★★★★

his animated Japanese fairy tale, overlaid with modern ecological concerns, was the first example of its genre to really get a push in the American market. The Englishlanguage script was written by cult comicbook author Neil Gaiman, and the voice actors are an A-list bunch including Billy Bob Thornton, Minnie Driver, Gillian Anderson, and Claire Danes. If you're a fan of anime, then Princess Mononoke will doubtless thrill you; it's easily the best thing of its kind since Akira. Others, though, may be disappointed. As visually impressive as some of it is, mostly it's the same old out-of-whack perspective, characters with unnaturally large eyes, and cheat-shot visual shorthand for explosions and the like - all familiar to TV viewers since the days of Astroboy.

That said, the DVD transfer is visually breathtaking — you'll be hard-pressed to remember the last time you saw such gorgeous green — and the soundtrack is stunningly realistic. Bonuses include the theatrical trailer and a short documentary featuring the actors and Gaiman, who explains why the film's director, Hayao Miyazaki, is considered a god in *anime* circles. English, French, and Japanese, Dolby Digital 5.1; letterboxed (1.85:1) and anamorphic widescreen; dual layer. Steve Simels

TIMECODE

Columbia TriStar

Movie ★★★ DVD ★★★★

Mike Figgis shot his little spoof of the movie business, where everyone seems equally addicted to cocaine and cell phones, in 90-minute single takes with four synchronized digital video cameras. These are presented in split screen, so that you do the editing in your head as you watch. Here's an experimental film with some entertainment value, especially on DVD, where you can switch between the four soundtracks, play the unrated version, or listen to Figgis's commentary for each one. English, Dolby Digital 5.1 and Dolby Surround; full frame (1.33:1); dual layer. Sol Louis Siegel

SAVING GRACE

New Line

Movie ★★★★ DVD ★★★★

Cheech & Chong meet Masterpiece Theater in this charming throwback to the era of character-driven British comedies. When a genteel, middle-aged wife loses her husband and



Grace's Brenda Blethyn, Craig Ferguson

finds herself suddenly in debt, she uses her gift for gardening to grow a bumper crop of ultra-high-quality pot, with often hilarious results. Cornwall's gorgeous seaside cliffs are nicely presented in this DVD transfer, as are the soundtrack's many high-flying hits. Extras include two commentaries by the actors and the production crew, totaling almost four hours of casually engaging chatter. Lighter than air? Maybe, but far more intoxicating. English, Dolby Digital 5.1 and Dolby Surround; panand-scan, letterboxed (2.35:1), and anamorphic widescreen; dual layer. Ken Korman

HOUSE OF GAMES

MGM

Movie ★★★★ DVD ★★★

Playwright David Mamet's 1987 directorial debut tells an unpredictable tale of con artists and the obsessive psychiatrist who falls under their spell. The way Mamet's actors speak — in the more direct and exaggerated manner of a stage play — may throw you at first, but this strikingly original film is worth the time it takes to adjust to. The disc lacks the crispness of the best DVDs, but you'll be too involved with the story's twists and turns to object. English, French, and Spanish, Dolby Digital twochannel mono; pan-and-scan and letter-boxed (1.85:1); single layer. Ken Korman

THE REPLACEMENTS

Warner

Movie ★★★ DVD ★★★★

Keanu Reeves continues to show about as much range as a block of Gouda cheese, but he fills out his uniform well enough as a scab quarterback in this instantly forgettable but goodnatured bit of gridiron puffery. The DVD includes a great transfer, some nice surround effects, two featurettes, and a commentary. English and Quebec French, Dolby Digital 5.1; letterboxed (1.85:1) and anamorphic widescreen; dual layer.

Marc Horowitz

ROAD TRIP

DreamWorks

Movie ★ → DVD ★ ★ ★ ★

This deliberately dumb collegiate comedy is the sort of movie that happens when something like American Pie becomes a cultural signifier. That said, there are a few laughs to be had — the licking-the-mouse scene is actually pretty funny — but MTV comedian Tom Green is painfully unamusing as the narrator. The DVD transfer is very good looking, and extras include some deleted scenes, a featurette, and a music video by the Eels. English, Dolby Digital 5.1, DTS 5.1, and Dolby Surround; letterboxed (1.85:1) and anamorphic widescreen; dual layer.

Steve Simels

THE ART OF WAR

Warner

Movie ★★ DVD ★★★

Wesley Snipes kicks some serious butt in this kinetic political thriller about a U.N. agent who's so deep-cover that even he barely knows who he is. While the plot is a little contrived, a good cast — including Donald Sutherland and Anne Archer — makes it seem more plausible, and director Christian Duguay manages to stage some pretty amazing (read: John Woo-ish) martial-arts sequences whenever things threaten to slow down. The transfer is both beautiful and extremely loud. English, Dolby Digital Surround EX; letterboxed (2.35:1) and anamorphic widescreen; dual layer.

Steve Simels

SOMEWHERE IN TIME

Universal

Movie ★★★ DVD ★★★★

This romance about a present-day playwright (Christopher Reeve) who wills himself back to 1912 to meet his dream woman (Jane Seymour) has gained a strong cult following since its initial box-office failure in 1980. While it takes a while for the picture to really get started, Reeve and Seymour work well together, the settings are lovely, and the story itself casts a spell. The DVD transfer is a bit hazy, but the mono sound is fine. The commentary is rendered superfluous by the hour-long documentary, in which everyone important to the picture participates. English and French, Dolby Digital two-channel mono; letterboxed (1.85:1); dual layer. Sol Louis Siegel



Matador



STEPHEN MALKMUS

Music *** Recording * * * * *

tephen Malkmus seems relieved to be away from Pavement and wriggling his shoeless toes in the grass. His old band's later albums were already moving toward a lighter, more tuneful vibe, and the progression continues on his first solo album, where he often comes across downright giddy - like a man freed of Great Expectations.

Malkmus indulges a deep-seated need to be inscrutable in his lyrics, whose streaming silliness in the service of golden melodies recalls everything from British surrealists like early Soft Machine and Hatfield & the North to (don't gag) America in the trio's more goofy moments. Attribute this to West Coast sun, good weed, the joy of being bandless or just having been blessed with a mind that free-associates with ever more willful abandon, but Malkmus meanders about the musical slipstream with spirited insouciance. He is capable of surprise and of being surprised, which makes his self-titled

album an entertaining voyage of musical discovery for artist and listener alike.

Stephen Malkmus begins a bit ominously with "Black Book," whose minor-keyed, post-Summer of Love aura, dripping with intimations of betrayal, is edgily psychedelic. Notice how he splits the word "permanently" into five distinctly enunciated syllables: "per-ma-nent-al-ly." After that wowiezowie opener, the sun comes out on "Phantasies," an antic, upbeat travelogue that smilingly urges going with the flow: "Don't be a bitter man / It could be worser." (He's right, y'know.) Malkmus rocks in a more straightforward way on "Discretion Grove," with fuzz-tinged guitars emitting grungy noise like a shuddering muscle car that can't

Excellent

Poor

Music refers to content alone. Recording refers to sound quality and, where applicable, multichannel mix.

wait for the light to turn green. Meanwhile, "Troubbble" sounds like anything but with its playful toy piano, darting guitar asides, and fanciful lines like "There's no proof of halos strapped in your mind."

The sugar-coated, fanciful pop reaches a sort of peak on "Jo Jo's Jacket." Weird and wonderful, almost indescribable, it opens with a prologue from and opening verse about Yul Brynner, erupts into a falsettosung glam-rock chorus, and then proceeds to verses where Malkmus coyly makes like Lou Reed voicing the woman's point of view: "I'm not that type, no, I'm not sweet." Are you following? Don't worry, just hold on and enjoy the ride, because the 12 songs on Stephen Malkmus are more about scenery than sense. And the scenery is splendid.

Parke Puterbaugh

THE ROSENBERGS

Mission: You

Discipline Global Mobile

Music ★★★ Recording ★★★

uch has been made about the Rosenbergs' business dealings: rejecting a contract offered by Jimmy Iovine and Doug Morris's online label (Farmclub.com), signing with Robert Fripp's artist-friendly venture (Discipline Global Mobile), and striking a deal for tour support with Napster in return for periodic song uploads. It's all very heartening, a giant step for musicians' rights and a model for the future of artist/label relations. But overlooked in all the reportage is the music. On that count, the Rosenbergs are a breath of fresh air as well.

Mission: You bathes the ears in ringing harmonies, chiming chords, lingering melodies, and an ocean's worth of dolphinfriendly hooks. It's pure pop personified, a song-oriented confluence of guitars, drums, and voices imbued with power and tempered by restraint. This collection of 11 songs is like a box of sweet, piquant nuggets that can lift the spirits. What's not to like about a wistful love song that exclaims, "Put your hands around my heart / I wanna be your drug of choice"?

Much of Mission: You is winsome but not wimpy. Witness the slamming rhythm and melodic invention of "In Pursuit" and the glorious, Big Star-like chordal crunch of "Paper and Plastic." Sonically, the album is unusually full and punchy, too. The only objectionable touch is the occasional use of vocoder-processed vocals. Otherwise, the Rosenbergs keep their train on a straight, tuneful track, rolling toward a power-pop nirvana. Parke Puterbaugh

TOY MATINEE

Reprise (CD)

Music ★★★★ Recording ★★★★

DTS (DTS 5.1 CD)

Music ★★★★ Recording ★★★

Unitone (Special-Edition CD)

Music ★★★★ Recording ★★★★★

DTS (DVD-Audio)

Music ★★★★ Recording ★★★

kay, raise your hand: How many of you out there are wondering why a record you've never heard of has gotten so much attention in so many formats? Hmmm . . . that's a lot of hands. As I suspected. Toy Matinee, the band, was a studio outfit led by Madonna producer Patrick Leonard and the late Kevin Gilbert. *Toy Matinee*, the album, was first released in 1990. How to describe its brilliant, artful pop? Put it this way: If the 5-millionand-counting people who bought the Beatles' *I* bought this album, they wouldn't be disappointed. But back in 1990, few people even noticed *Toy Matinee*. Instant cult item.

It was noticed, however, in the music industry, for its production by Bill Bottrell. As mas-

Face-off: CD vs. DVD-A





tering engineer Joe Gastwirt told us in a November 1999 interview, *Toy Matinee* is "that real famous Bill Bottrell record . . . a great stereo mix, a great stereo recording." And today, the original stereo CD still sounds vivid.

But a remastered, special-edition CD, just released by Leonard on his own Unitone imprint, sounds even better. The album's opening triple-punch — "Last Plane Out," "Turn It On Salvador," and "Things She Said" — has warmer vocals, deeper bass, and sharper guitars and keyboards. Furthermore, that famous mix now seems as panoramic as you can get without remixing for surround.

Indeed, *Toy Matinee* would seem tailor-made for 5.1-channel reproduction. A couple of years ago, certain people in the industry thought as much. "So they decided — I don't know who decided it, because I couldn't believe that Bottrell would be involved with this — to remix it for DTS." That's Gastwirt

again, and he was right to be suspicious. The remix for DTS's so-called 5.1 CD was done not by Bottrell but by Elliot Scheiner. And Gastwirt was right to be denigrating, too, because the mix follows the DTS company line of *Let's put as much stuff in the surround channels as possible*. Background vocals — in the back, of course — almost startle you from your chair. As for the subwoofer output, you may like yours big, but you won't like it so big and mushy that it sounds like a huge, wet noodle.

My hope was that somebody would get it right for DVD-Audio. But, alas, the brandnew DVD-A comes courtesy of DTS again, with the same Scheiner mix. Sure, the *sonic fidelity* itself is impressive, but it ultimately serves to exaggerate the already exaggerated mix, to the point where I found myself preferring the 5.1 CD to the 5.1 DVD-A. Either way, one listen to "Things She Said," where the keyboards are cranked and the all-important acoustic guitars are nearly dumped, is enough to prove that this is indeed a "DTS Music Experience," not a Bottrell, Leonard,

and Gilbert experience.

To fully enjoy those acoustic guitars, go back to the special-edition CD, where they resound in all their glory — especially in an alternate version of the track, included here as a bonus. You also get alternates of "Last Plane Out" and "There Was a Little Boy," as well as a beautiful, unreleased ballad, "Blank Page." (You get no extras whatsoever on DTS's DVD-A.) But most important, the special-edition CD gives you the recording as it was meant to

be heard. And this *Matinee* is widescreen enough on its own. *Ken Richardson*

moe. dither

Fatboy

Music ★★★★ Recording ★★★★

ong-familiar live pieces that finally appear on studio albums sometimes come off as weak afterthoughts, but not so "Captain America," which leaps from moe.'s new disc with a sharp-edged energy that characterizes much of what follows. The CD booklet shows an astronaut devolving into primordial-soup protoplasm — suggesting that these songs, too, have returned to their essence, in contrast with the more rambling concert improvs. That image can be misleading, though; with guest keyboards, psychedelic violins, and turntable scratching, the production here is anything but simplistic. Percussion and drums are distinct and complementary, and the dual guitar

Super Bells

early 30 years ago, Mike Oldfield's Tubular Bells launched a record label, Virgin. Today, Virgin is reissuing the landmark instrumental work to help launch a music format, the multichannel Super Audio CD, According to the fascinating liner notes here, a pristine fourchannel tape — mixed in 1975 from the original 16-track master to demonstrate the then-nascent idea of quadraphonic sound to Oldfield - was used for the transfer to SACD. I listened to the disc on the same player that Ken Pohlmann reviews in this issue (see page 49), but although I understand his disappointment over the "missing" center and subwoofer channels, I didn't miss them at all. Rather, I enjoyed discovering countermelodies I'd been unknowingly missing all these years. The precise sound and the excellent mix gave great power to the slicing riffs starting at 6:07 and incredible detail to the multiple guitars at 7:42. I marveled at the distribution of instruments in the ostinato finale to Part 1 and the restoration of the "Piltdown Man" section at the end of Part 2. Listening to Tubular Bells on SACD was, in fact, one of the most satisfying audiophile experiences I've had — and that includes many DVD-Audio discs I've heard. Did somebody say, "format war"? Ken Richardson



Tracking DVD-Audio

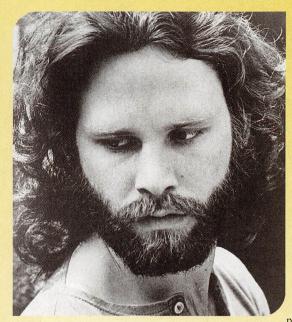
ike the CD before it, DVD-Audio must grin and bear some growing pains. At the same time, the latest wave of software proves that the young format is already showing signs of maturity. Attaboy!

First, the pains. The Doors' L.A. Woman (Music ★★★★, Recording ★★★), reappearing on Elektra as part of the Warner Music Group's DVD-Audio campaign, actually feels good in spots. The six-channel mix of "Been Down So Long" lends an urgent thwack to the snare drum and nicely places electric rhythm guitar in the left surround channel and acoustic rhythm in the right. "Cars Hiss by My Window" has an effective late-night ambience, and "Riders on the Storm" certainly has a good storm. But the handclaps in "The Changeling," leaping loudly from the surrounds, scared the wits out of me. Tom-tom accents in "Love Her Madly" are similarly gimmicky, as is the four-note repeated riff of "L'America," whose constant clockwise motion around the listening room left me dizzy. And hold onto your chair for the title track, where Jim Morrison first sees Mr. Mojo risin' in the center channel, then in the left surround, and then in the left front, right front, left surround, right surround, left front . . . fooey!



On the other hand, **k.d. lang**'s current Warner Bros. album, *Invincible Summer* (Music **, Recording ***), errs on the side of caution, with the surrounds used mainly for oh-so-subtle ambience. You get the sense of a missed opportunity here: a clever six-channel mix could have taken this dreamy music and spread it around you like a field of flowers.

The Corrs' In Blue on 143/Lava/Atlantic (Music ★★, Recording ★★★) uses the surrounds prominently and, for the most part, intelligently. Putting keyboards and answer vocals back there for "Breathless" and chiming guitars there for "No More Cry" is fine



for this kind of ear candy. But the center channel is rather schizo, sometimes isolating the lead vocal, other times opting for bass — and when the latter's the case, it sounds like there's a hole in the mix. Other oddities: the subwoofer output varies from overripe to just

right to nonexistent, and the photos you can view while listening suddenly vanish after Track 9 of this 15track disc. Speaking of visual extras, In Blue does go beyond the usual photos, bio, and video clip to provide text-on-screen "commentary" by the band. But more often than not, the commentary is as follows: "This is the third song with [producer] 'Mutt' [Lange], and it's different from the other two because it's a ballad." Deep.

Best of the Warner Group titles is **Buena Vista Social Club** on World Circuit/ Nonesuch (Music *****,

Recording ****). Ry Cooder's beyond-excellent Cuban adventure has a sumptuous surround mix. Robert Ripps, in his review of Warner's new classical DVD-Audio discs (see page 130), makes the valid point that the conductor's podium may not be the best seat for hearing a symphony. But when it comes to the Social Club... well, the centerfold in the DVD booklet shows the musicians sitting in a circle, and *you are there*, with the instruments enveloping you (even though the mix doesn't use the center channel) yet with nothing singled out or overdone. Furthermore, whereas the pure sonics of DVD-Audio are evident

only to a certain degree with an old record like *L.A. Woman*, the richness of the new format's resolution is abundantly clear on intimate tracks like "¿Y Tú Qué Has Hecho?" and "Orgullecida." Add to all that a handsome design and helpful onscreen liner notes, and the result is, at this early date, Warner's single best case for DVD-Audio.

Meanwhile, the 5.1 Entertainment Group has four new various-artist sets on its Silverline label. Classic Crooners (Music ***, Recording ****) and Surf's Up (Music ***, Recording ****) were mixed primarily by 5.1's Ken Caillat, and he was smart to keep the surround sound simple for simple numbers by the croonin' Peggy

Lee and the surfin' T-Bones. (Mark Linette's mixes of the Beach Boys' "Dance, Dance, Dance" and "Sail On, Sailor" are good but not as revelatory as we might have hoped.) Classic Jazz (Music ***, Recording ★★★) and New Age (Music ★★, Recording ***) were mixed by 5.1's Gary Lux, who made it clear in our February/March issue ("5.1 in the Making") that he's a Big-Surround Guy. Space precludes me from detailing all the twists and turns he applies to classic jazzers from Bobby Hutcherson to Buddy Rich. You need a map to follow this stuff. Suffice it to say that the New Age disc makes more sense as a surround experience, despite the often ho-hum music.

The star of DTS's first batch of DVD-A discs, *Toy Matinee*, is hardly ho-hum, but that's another story (in fact, it's another review, on page 125). Which leaves us with Etheridge-wannabe **Larisa Stow**'s *Moment by Moment* (Music ***), Recording ****), Segovia/Van Halen-wannabe **Steve Stevens**'s *Flamenco a Go Go* (Music ***), Recording ****), and the tribal-synth duo **Studio Voodoo** (Music ***), Recording ***). This is DTS, so this is Multichannel a Go Go. And despite the Voodoo mixer's protestations, his DVD is in fact just a "surround demo disc"—as are the others.

Instead, try one more Warner disc, the **Firesign Theatre**'s *Boom Dot Bust* on Rhino (Program * * * * *, Recording * * * *). Savor the comedy troupe's humor, the cool mix, and the video interview where two of the guys skewer DVD-Audio itself. "Wonder dome of sound," indeed! *Ken Richardson*

Corrs and Doors: the Irish siblings are *In Blue*, while Jim Morrison gets his mojo risin' for *L.A. Woman*.

leads intertwine smartly, particularly on "Water" and "Rise." Yet the guitars get crunchy and the bass gets fat when necessary.

The cryptic existentialism of the lyrics runs from resigned moodiness ("Opium") to joyous celebration ("New York City"). And the 12 tunes here reflect a mosaic of influences, including J.J. Cale ("Tambourine"), Tom Petty ("Can't Seem to Find"), and Strangefolk ("Understand"). One complaint: Considering the many covers in the band's repertoire, the straightforwardly rendered "In a Big Country" is a baffling choice for the first to be officially recorded. Amusing, sure, but it "dithers" away the album's moe.mentum.

Andrew Nash

KRISTIN HERSH

Sunny Border Blue

4AD/Beggars Banquet

Music *** Recording ***

ere's the latest — and, in fact, one of the best — in a long string of brilliant Kristin Hersh albums that probably won't get her on the radio or lift her above cult status. But in an era when words like "edgy" and "alternative" get thrown around freely, she's the genuine article. Using a voice that ranges from seductive whisper to banshee wail, she writes knowingly about characters with strong emotional and chemical addictions, messy relationships, and complicated sex lives.

After a pair of relatively lighthearted albums, Sunny Border Blue returns to the gray areas where Hersh is most at home. It's neither an acoustic nor a band record; instead, she builds a lush pop sound via guitar overdubs, rocking out only on a cover of Cat Stevens's "Trouble." Her own songs are more emotionally frank than ever, with some beautifully bleak turns of phrase and many flashes of sly humor. If any song this year is going to have a better opening line than "Let's back up and act like we're sober" ("Summer Salt"), I look forward to hearing it. Brett Milano

SWAG Catch-all

Yep Roc

Music ★★★ Recording ★★★★

LOS SUPER SEVEN Canto

Columbia/Legacy

Music *** Recording ****

RAISINS IN THE SUN

NAISINS I

Rounder

Music ★★★ Recording ★★★★

All-star side projects (or, if you prefer, supergroups) are often a dicey prospect, sometimes a clash of egos, sometimes an ill-matched group of salable names. And sometimes, everything meshes, as on Swag's first full-length disc, *Catch-all*. It helps that this Nashville-based combo — made up of Ken Coomer (Wilco), Jerry Dale McFadden (Sixpence None the Richer), Robert Reynolds



Swag boys knuckle down: Petersson, Coomer, Powell, McFadden, and Reynolds

(the Mavericks), Tom Petersson (Cheap Trick), and solo artist Doug Powell — has a coherent mission, which is mainly to replicate garage and British Invasion rock of the '60s. This can result in explicit homage, as on the Kinky cut "Please Don't Tell" or the imaginary *Pet Sounds* outtake "Different Girl," but generally it's a cool cluster of influences at work here. Added verisimilitude: 12 songs in 35 minutes.

Also meshing nicely is the Latino group Los Super Seven on their second album, *Canto*. The general mood is heartfelt and romantic, featuring passionate vocals from folk like Los Lobos' David Hidalgo and the Mavericks' (again) Raul Malo over delicately infectious rhythms. The selections range from the trad chestnut "Siboney" to Hidalgo's wholly contemporary rendition of "Teresa," and while

Critics, Um, Plugged

When **S&V**'s music critics aren't fretting over deadlines imposed by us, they're often . . . fretting over deadlines imposed by others!

Several of those outside deadlines have led to notable work, so let's note it now.

Parke Puterbaugh is the co-author, with Alan Bisbort, of Rhino's Psychedelic Trip (Miller Freeman). Check out the chapter in which Parke and Alan point the tape recorder at themselves: "Two Rock Critics Who Never Took Acid Reminisce About the Late '60s."

Brett Milano is the off-camera man conducting the 45-minute group interview on the DVD-Video *The Cars Live* (Rhino). The gig is from 1979, but Brett

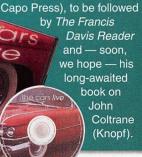
RHINO'S Psychedelic

talked to the band last August, just two months before bassist Ben Orr died from pancreatic cancer. (By the way, look closely at the audience after "Nightspots." The woman with the camera is none other than our music photographer, **Ebet Roberts**.)

Billy Altman, who is also senior editor of album reviews for Sonicnet.com, has won an ASCAP–Deems Taylor Award for his liner notes for the Eric Andersen compilation *Violets of Dawn* (Vanguard).

Will Friedwald wrote the liner notes for Freddy Cole's Merry-Go-Round (Telarc) and The Complete Columbia Recordings of Mildred Bailey (Mosaic). His new book, due later this year, is Star Dust Melodies (Pantheon), a collection of essays on American popular song.

Francis Davis will have a collection of writings out this year, *Like Young* (Da





THE DONNAS

The Donnas Turn 21

Lookout!

Music ★★★ Recording ★★★

The Donnas have now achieved what their heroes, the Ramones, couldn't: they've made the same debut album four times instead of just three. The only signs of maturity are better hooks and a few more guitar solos, and the only sad song is about running out of beer.

Brett Milano

MONSTER MAGNET God Says No

M&A

Music ★★★ Recording ★★★↓

And lo, let it be written that an ex-stoner shall lead them unto salvation from the proliferation of wimp-bizkit rock. Said savior is Monster Magnet mastermind Dave Wyndorf, who piles on the riffs in this more sharply arranged successor to Powertrip. Yea, your head shall bangeth with the keyboard-driven slam of "Heads Explode," the '70s crunch of "All Shook Out," and the slide-blues curveball of "Gravity Well." God says yes. Mike Mettler

DOUBLE TROUBLE

Been a Long Time

Tone-Cool

Music *** Recording ***

Stevie Ray Vaughan's bassist and drummer, Tommy Shannon and Chris Layton, are joined by some of Vaughan's stylistic heirs (Jonny Lang, Kenny Wayne Shepherd, Charlie Sexton, Susan Tedeschi) on an album that rekindles his spirited approach. Wisely, the duo avoids R&B instrumentals and predictable covers for a brace of thoughtful originals, half of which they had a hand in writing. Bluesy sagacity and superb musicianship course through this set, of which SRV would've been rightly proud.

Parke Puterbaugh

RICHARD LLOYD

The Cover Doesn't Matter

Upsetter

Music *** Recording **

The songs don't matter much either (except "I Thought," written in 1978 and first done by the



DOLLY PARTON Little Sparrow

Sugar Hill

Music ★★★★ Recording ★★★★

On this follow-up to The Grass Is Blue, Parton continues her pilgrimage back to country music's deepest roots with not only another terrific bluegrass album but her best overall work in years. Surrounded by the likes of Jerry Douglas, Chris Thile, and Alison Krauss, she glides through everything from gothic ballads to frisky breakdowns with appropriate sass and grace — and honor. Billy Altman

SOLAS The Hour Before Dawn

Shanachie

Music ★★★★ Recording ★★★★

There's little in the entire breadth of Celtic music that U.S.-based Solas can't do, and do better than most — and that goes for both sides of the Atlantic. Led by instrumentalist extraordinaire Seamus Egan, the group's fourth album throws the spotlight on all five members, with particular sparks coming from Mick McAuley's nimble accordion, Winifred Horan's near-possessed fiddle, and new vocalist Deirdre Scanlan's clarion singing. Billy Altman

dB's). Also, the sound's muddy (intentionally so, per the liner notes), and Richard Lloyd was never much of a singer. Fortunately, his guitar work still displays the brilliance he has shown with Television and Matthew Sweet. With no big solos but plenty of thrilling stabs, that guitar adds poetry to an otherwise nice little meatand-potatoes rock disc. Brett Milano

ELLIOTT MURPHY/ IAIN MATTHEWS

La Terre Commune

Eminent

Music ★★★ Recording ★★★

The two singer/songwriters do indeed find common ground on this collaboration. They come at their craft with complementary perspectives from the late '60s and early '70s -New York-area native Murphy in an edgy, street-smart way, and U.K.er Matthews in a melodic, introspective manner befitting his roots with Fairport Convention and his own Southern Comfort. Between Murphy's atmospheric compositions and Matthews's insinuating lyricism, the album gives off a comfortable, knowing vibe. Billy Altman

most of the 12 songs here are in various Hispanic dialects, you won't have to be multilingual to get the message.

Altogether more hit and miss is Raisins in the Sun, jokingly described in the disc's liner notes as "a ramshackle outfit of burned-out session musicians [and] professional songwriters." Far from being burned out, the sessions guys are smoothly capable, and the writers, Jules Shear and Chuck Prophet, ensure that the lyrics will be clever even when the music gets clichéd. There's an appealing offthe-cuff quality here (the songs were written and recorded in two weeks) and a nice mix of rockers and ballads, but it all has a somewhat generic feel. Maybe what's missing is someone from the Mavericks. Richard C. Walls

HONEYDOGS Here's Luck

Palm

Music ★★★★ Recording ★★★★

ne of the best bands in the country is also one of the best-kept secrets. On Album No. 4, Minnesota's brainy Honeydogs make wry, rootsy Americana that's off-center enough to keep you wondering what's coming up next. Songwriter/vocalist Adam Levy brings an acidic wit to "Sour Grapes" and skillfully sketches a general unraveling of the social matrix in "Wilson Blvd." The latter is plaintive and pretty, like Alex Chilton singing a Jimmy Webb tune. Songs unfold at their own deliberate pace, shaded with strings and melodic rays that break through the cloud banks. Things get particularly sour in "Red Dye #40," moving beyond literal sense to convey a rocking, Dylanesque rancor tinged with gallows humor.

Here's Luck is an introspective classic whose relatively subdued façade shouldn't be mistaken for creative enervation. To the contrary, this is one of those albums that grows on you - measure for measure, song by song — until it's hard-wired into your psyche.

Parke Puterbaugh

COUNTRY

RODNEY CROWELL

The Houston Kid

Sugar Hill

Music ★★★ Recording ★★★★

Diamonds & Dirt

Columbia/Legacy

Music ★★★★ Recording ★★★★

inger/songwriter Rodney Crowell helped solidify the foundation for the country boom of the 1990s with his 1988 release, Diamonds & Dirt. It was the first country album to spawn five No. 1 hits, including such alltime keepers as "After All This Time," "I Couldn't Leave You If I Tried," and "It's Such

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a Small World," his duet with then wife Rosanne Cash. Yet the last decade has found the country-rocker (in the words of another one of his memorable songs from the late '80s) traveling "many a long and lonesome highway" in an apparent search for some kind of musical peace of mind. The results of his artistic wanderlust have generally been commercially and critically disappointing, reaching a confused nadir in 1997 when he actually joined his own backup band in the (thankfully) short-lived Cicadas.

Crowell's latest album, *The Houston Kid*, finds him sifting through memories of growing up in Texas (hence the title), and while it's an admirable attempt, the stories told in songs like "Telephone Road" and "The Rock of My Soul" tend to be far stronger on detail than on point. Moreover, a good number of them (two about a family struggling with the tragedy of AIDS, one about unredeemable lowlife crooks) distract from, rather than inform, the overall concept, rendering the album as a whole confounding in both design and execution.

For what it's worth, those are two things the incredibly focused *Diamonds & Dirt* sure wasn't. And that album has just been remastered and reissued as part of Legacy's American Milestones series, complete with some eye-opening bonus tracks. That it's appearing at the same time as *The Houston Kid* is yet another twist of fate for Rodney Crowell.

Billy Altman

JAZZ

RALPH J. GLEASON'S JAZZ CASUAL

Instrumentals, Vol. 1: Count Basie, Dizzy Gillespie, and John Coltrane

Rhino (DVD-Video)

Music ★★★★ Recording ★★★

Vocals, Vol. 1:

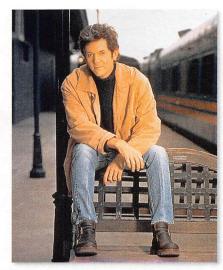
Carmen McRae, Mel Tormé, and Jimmy Rushing

Rhino (DVD-Video)

Music ★★★★ Recording ★★★

y the end of the 1950s, Ralph J. Gleason was one of the most respected jazz critics in America. His column for the *San Francisco Chronicle* was syndicated in 65 newspapers throughout the world. Many people know that Gleason would go on to help found *Rolling Stone* magazine. But before that, he created *Jazz Casual*, a TV show that aired on the predecessor to PBS from 1960 to 1968. Six episodes have now appeared on two DVD-Videos, three to a disc.

Living up to its name, the show was informal, shot in a studio without an audience. Of-



Rodney Crowell, still traveling . . .

ten Gleason would sit, cigarette in hand, right in the middle of the musicians, so he could segue from music to conversation with nary a pause. Watching it now, it's like inviting a few jazz greats into your living room. Everyone is at his or her best, coming up with endless moments of incredible music. And everyone but John Coltrane, who chose to speak only through his music, offers entertaining, in-depth comments when answering Gleason's well-chosen questions.

Video quality varies from adequate to very good. The audio is presented in both two-channel mono sound and a 5.1-sweetened "surround" remix. Since there is little consistency, you might prefer mono for some episodes, 5.1 for others. Whichever you choose, it seems that all the audio tracks have been cleaned up as much as possible from their original state. And overall, the music and the visuals join together to offer an intimate look at some of the greatest jazz performers of the past century.

Rad Bennett



Sheet Coming Releases

AEROSMITH Just Push Play **BUCKCHERRY** Time Bomb

Just say "rock & roll." Columbia (Aerosmith) and DreamWorks (Buckcherry), March

GUIDED BY VOICES

Isolation Drills

Follow-up to *Do the Collapse*, a 1999 **S&V** Entertainment Award winner. **TVT**, April

SPACEHOG The Hogyssey

Press info: "Order of tracks is loosely based on the sequence of events in the movie 2001: A Space Odyssey." Whoa. Artemis, April

AUNTIE EMINEM

The "Surrender Dorothy" LP Oops . . . another persona did it again! And now he's Toto-phobic! Disinterscope, May

CLASSICAL

BEETHOVEN Symphonies

Nos. 6, 7, 8, and 9

Soloists; Deutsche Staatsoper Berlin Chorus; Staatskapelle Berlin, Daniel Barenboim cond. Teldec (DVD-Audio)

Performance ★★★

Recording ***

JOSÉ CURA Verismo

Philharmonia Orchestra, José Cura cond. Erato (DVD-Audio)

Performance ★★★ Recording ★★★

th the Warner Music Group continuing its DVD-Audio program, we now have the last three installments in its Beethoven Symphony Cycle — one disc each for the Sixth ("Pastoral") and the Ninth ("Choral") and one disc that couples the Seventh and the Eighth. The six-channel mixes create reasonably satisfying concert-hall settings, but as with the earlier symphonies, they often seem to position us mid-orchestra rather than midauditorium. This might provide a thrill ride for frustrated conductors, if not the ideal listening situation for most mortals. In the second movement of the Sixth, where a woodwind cadenza imitates birdcalls, more liberal use of the two surround channels would have been welcome. Then again, the Ninth's final movement, strongly sung, is somewhat weakened by overseparation of the soloists (front) from the chorus (surround). The video menu

Also from the Warner family comes *Verismo*, referring to the late-19th-century musical style that brought the "realism" popular in the literature of the time to Italian opera. This disc features arias from Leoncavallo's *Pagliacci*, Mascagni's *Cavalleria Rusticana*, and Giordano's *Andrea Chénier* as well as lesserknown works by these three and their compatriots Catalani and Ciléa. Tenors from Caruso to Pavarotti have recorded this repertory, but despite Argentine tenor José Cura's claim (in a short interview included on the disc) to understand the importance the texts play in these visceral dramatic arias, his renditions aren't in the same league.

offers still photography for each symphony as

well as the same interview with conductor

Daniel Barenboim on each disc of the cycle.

The choice of this program for DVD-Audio is a bit odd in itself, given that the orchestral element is mostly accompaniment. The surround channels seem underutilized. The mix makes good use of the front channels for Cura's voice, but since it was recorded separately (freeing him to serve as the perfunctory conductor), it seems to occupy a space different from the orchestra's. The video menu is sparse: one photo per aria and that interview, from which we learn very little. *Robert Ripps*

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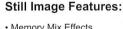
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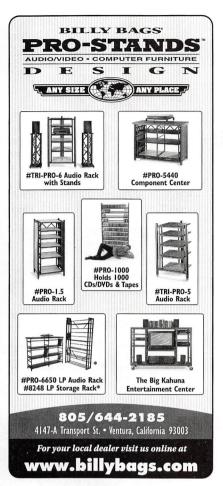
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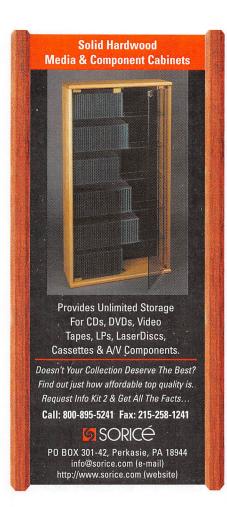
















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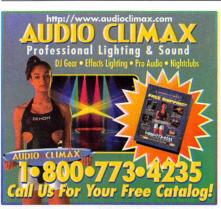
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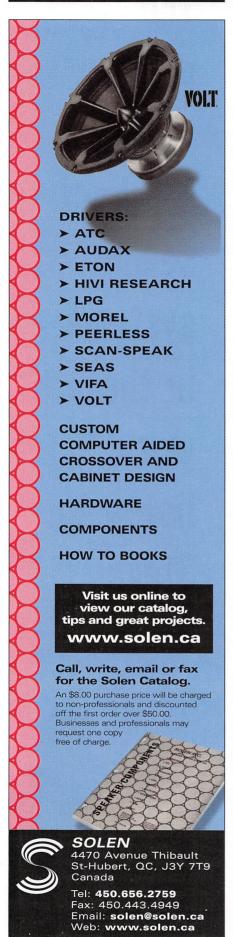
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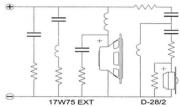
MDY-4 Dynaudio Speaker Kit

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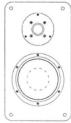
To be fair, these modest drive units cannot produce infrabass (those frequencies below 40 Hz), but in the other 99.75% of recorded material, they equal products that cost up to 10 times as much.

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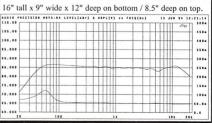


refined in a sophisticated 14 element filter. Every part is of the highest quality; every detail is the culmination of three years of careful analysis.

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Chatter Jammer

Ready to throttle the person sitting behind you in the movie theater who's making calls from her cell phone? Save yourself an assault rap by pulling out the Chatter Jammer pocket cell-phone blocker. Radiating a 40-foot Cone of Silence, this pager-size weapon is also useful for pedestrians threatened by drivers who pay more attention to



Woofer in the Middle

Sure, aluminum scooters were flying off shelves last season. But isn't it time to upgrade those kids with the latest in mobile entertainment? Outfit every scooter with a surround sound system! Friction-fueled minispeakers fixed to the corners of the platform are guaranteed to help Razorheads power themselves down the street in time to the beat. Cup holders not included.

Remote Jukebox

Confronted by a zillion remote controls piled at all angles on the couch and lamp table? Frustrated by not finding the one you need? Luckily, there's the Lazy Cruisin' Remote Jukebox, the only sofa-side swivel rack you'll ever need to handle all those infrared controllers. Just arrange them like slices in a pie tin and spin the tray around for the one you need now without stretching. Also holds assorted fruits and nuts.

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ThinAir Rears

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tine picture? Now, pressing the blue button on your remote control automatically squirts soapy water on the glass as variablespeed wipers leave the screen squeakyclean. Just remember to add fluid to the reservoir under the bezel. You'll never fret about letting your kids eat chocolate pudding or finger-licking-good chicken in front of the TV again!

Clapper Chum

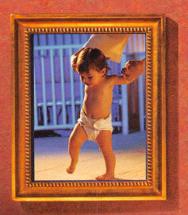
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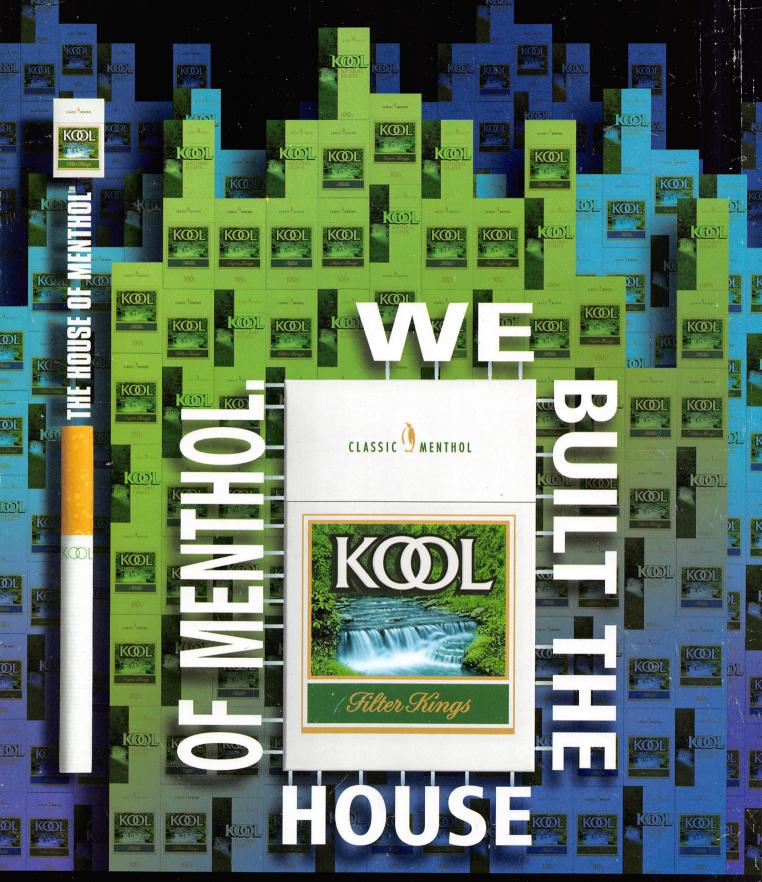
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